ATTACHMENT 3 - WORK PLAN

Work Plan Part I. Introduction

Regional Overview

The Santa Clara River Watershed (Watershed), consisting of approximately 1,634 square miles, contains the largest natural river remaining in Southern California. Areas located in the Angeles National Forest portion of the Watershed are home to the California condor and other threatened, rare, and endangered species. The Santa Clara River, which is largest natural river remaining in Southern California, travels through two counties: 1) Los Angeles and 2) Ventura. IRWM planning efforts are underway between entities in the two (2) counties to collaboratively address issues of mutual concern and benefit, such as water quality improvement.

The Upper Santa Clara River IRWMP Region represents an area of approximately 654 square miles within the Santa Clara River Watershed. The Upper Basin of the Santa Clara River, as defined for the purposes of this IRWMP, is bounded by the San Gabriel Mountains to the south and southeast, the Santa Susana Mountains to the southwest, the Liebre Mountains and Transverse Ranges to the northeast and northwest, and westward to the Ventura County Line. The Upper Santa Clara River Watershed is a logical region for integrated regional water management due to its history of cooperative water management, the topography and geography of the Region and the similarity of water issues facing agencies in the Region. There is no overlap of this Region with any other integrated water management planning region.

The Region is diverse, with both urban and rural areas as well as National Forest land. The Region encompasses the City of Santa Clarita, the towns of Castaic, Stevenson Ranch, West Ranch, Agua Dulce and Acton in unincorporated Los Angeles County, various other unincorporated community areas in Los Angeles County, open space areas of the Santa Monica Mountains Recreation and Conservation Authority and Los Angeles County Department of Parks and Recreation, and portions of the Angeles National Forest. As of the 2000 Census, the Watershed is home to more than 220,000 people with growth projected to increase to close to 430,000 persons by 2030 according to the 2005 UWMP.

Proposal Goals and Objectives

This Proposal is comprised of five priority projects that will deliver a strong combination of water supply, water quality and related benefits. These projects were developed through the Region's IRWM planning process and, when implemented, will:

- Develop new local water supplies, protect existing supplies, and promote water conservation to increase local water supply reliability and reduce dependence on imported water;
- Preserve open space and native habitats in multiple locations; and
- Improve water quality through increased use of local, surface water supply and beneficial use of tertiary treated water.

In doing so, this Proposal will meet the stated purpose of the USCR IRWMP, and help to achieve the goals and objectives that have been identified for the IRWMP through the Stakeholder planning process (see Table 3-1).

TABLE 3-1
PURPOSE OF THE UPPER SANTA CLARA RIVER IRWMP

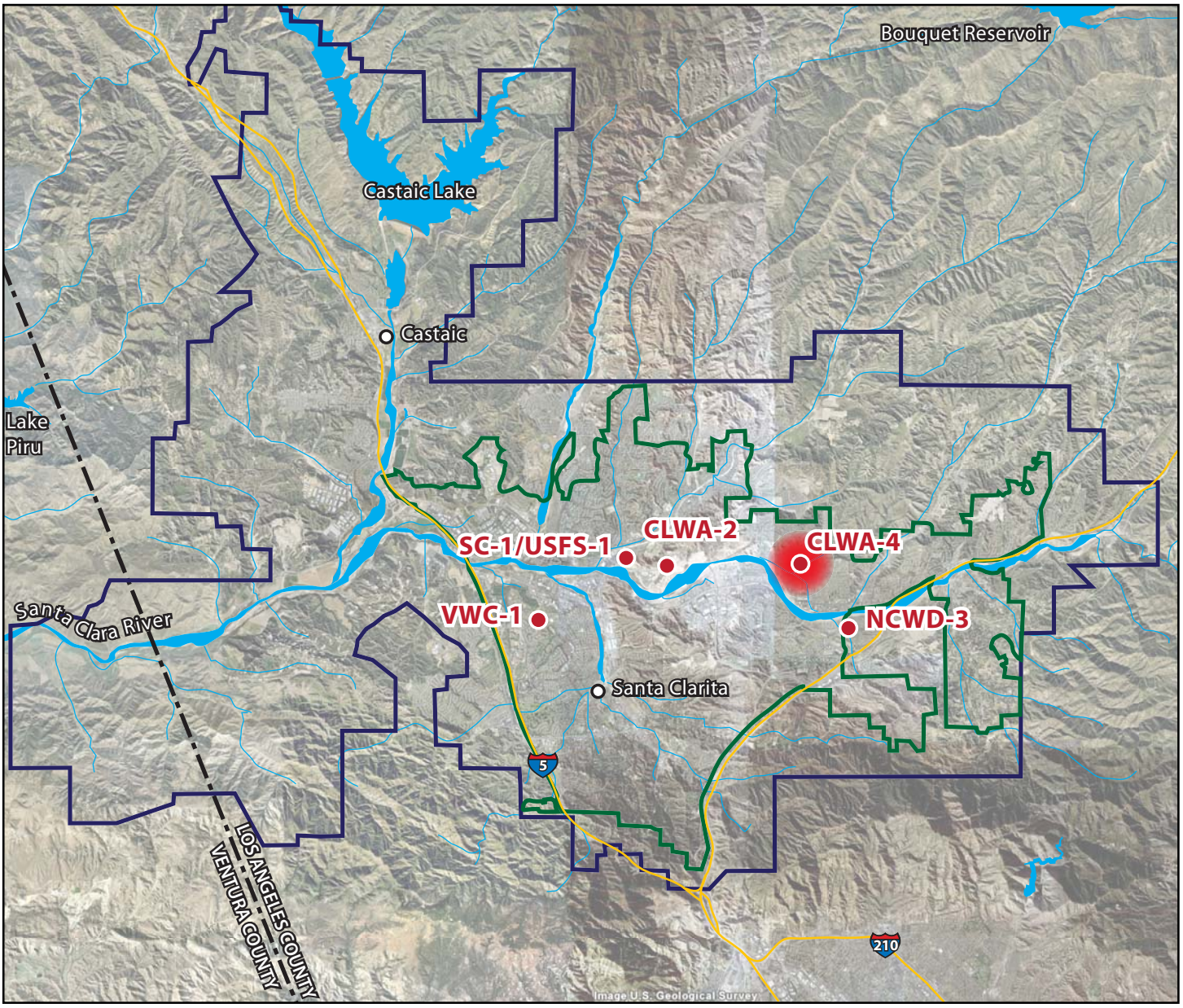
Goals	
Integrate water and watershed related planning efforts	
Facilitate regional cooperation	
Objectives	
Reduce Water Demand	Implement technological, legislative and behavioral changes that will reduce user demands for water.
Improve Operational Efficiency	Maximize water system operational flexibility and efficiency, including energy efficiency.
Increase Water Supply	Understand future regional demands and obtain necessary water supply sources.
Improve Water Quality	Supply drinking water with appropriate quality; improve groundwater quality; and attain water quality standards.
Promote Resource Stewardship	Preserve and improve ecosystem health; improve flood management; and preserve and enhance water-dependent recreation.

Overview of Projects

Table 3-2 provides on overview of the five projects that comprise this Proposal and that are identified in Figure 1. The project design status is identified by percent complete as of January 7, 2011. Relevant design documents are discussed in each project Work Plan section and provided electronically on CD.

While each project provides its own merits, the collection of projects will expand the boundary of the benefits, and enhance the reliability of existing supplies within the Santa Clarita Valley by reducing water demand, and increasing water supply and increasing water quality. The proposal as a whole will also:

- Spur further support for the IRWM planning process
- Create projects that demonstrate multiple benefits to the community and provide incentives for agencies to pass local funding measures; and
- Develop water management partnerships for coordinated implementation of regional projects



LEGEND:

- CLWA Service Area
- City Boundary
- Project Location
- Service Area Wide
- Interstate Line
- County Line

N

Sources:
1. Figure C-1 - Upper Santa Clara River IRWMP Candidate Projects
2. Google Earth - Image U.S. Geological Survey

VICINITY MAP
Overview of Project Locations

TABLE 3-2
PROPOSAL PROJECT LIST

Santa Clarita Valley Water Use Efficiency Plan Programs (CLWA-4)	Design Status 100%	Implementing Agency Castaic Lake Water Agency
CLWA previously commissioned the preparation of a Water Use Efficiency Plan. The plan recommends the implementation or modification of programs including: High efficiency toilet rebates, large landscape audits and incentives, CII audits and incentives, high efficiency clothes washer rebates, and new construction building codes. The agency intends to implement these recommendations. The anticipated savings from implementation is 2,400 AFY via rebates, audits, and incentives with an estimated 6,000 AFY in water savings with new construction building codes.		
Santa Clara River - Sewer Trunk Line Relocation (NCWD-3)	**Design Status 10%**	**Implementing Agency Newhall County Water District**
Newhall County Water District maintains a portion of sewer trunk line within the Santa Clara River riverbed, in the canyon country area of Santa Clarita which needs to be relocated to another location where it would not be exposed to elements that could potentially cause a rupture in the line. A line break would be detrimental to the ecosystems in and around the river, and also could affect domestic groundwater wells within the region. this project would be the first phase of the relocation which would consist of the design to relocate the sewer trunk line out of the Santa Clara riverbed, into the public right-of-way.		
Santa Clarita Valley Southern End Recycled Water Project (VWC-1)	**Design Status 30%**	**Implementing Agency Valencia Water Company**
VWC intends to expand the existing recycled water transmission and distribution system southerly to supply recycled water to additional customers as well as to potentially supply a source of recycled water to adjacent agencies. The Project includes the planning, designing, and construction of Phase 2C of the region's Recycled Water Master Plan, with recycled water improvements including various recycled water pipelines and pumping stations resulting in 910 AFY of recycled water.		
Electrolysis and Volatilization for Bromide Removal and DBP Reduction (CLWA-2)	**Design Status Pilot Plant**	**Implementing Agency Castaic Lake Water Agency**
CLWA has developed a technology that can remove bromide from source water. The pilot plant would increase the size of an experimental treatment process shown to be effective at removing bromide, reducing the concentrations of brominated disinfections byproducts which bromide causes and be cost-effective at treating large volumes of water. Water is passed between dimensionally stable anodes and the bromide is oxidized to bromine. Water is also oxidized to oxygen gas and hydrogen ions. This produces a very low pH near the surface of the anodes and large volumes of very fine gases, resulting in the volatilization of bromine. The pilot plant would treat 300,000 gpd of influent water using this same process at the Rio Vista Water Treatment Plan in Santa Clarita.		
Santa Clara River, San Francisquito Creek Arundo & Tamarisk Removal Project (SC-1/USFS-1)	**Design Status 90%**	**Implementing Agency City of Santa Clarita/Ventura Resource Conservation District**
The City of Santa Clarita is working with Santa Clara River Invasive Weeds Task Force to undertake a regional arundo/giant reed (Arundo donax) and tamarisk/salt cedar (Tamarix spp.) eradication Project in the Santa Clara River watershed. The Project will restore riparian habitat through the removal of these invasive plant species, improve water quality and increase water supply by increasing the available surface and subsurface water that can be utilized for beneficial purposes.		

Purpose and Need

The five priority projects intend to increase reliability of the supply through the implementation of conservation, recycled water, and improved water quality of local supplies. Currently, over half of the water supply to meet demand within the region comes from imported waters from the State Water Project. SWP waters are not considered to have the greatest reliability while local supplies

will provide greater supply reliability. Through the conservation programs and recycled water proposed in this grant, the most efficient use of the supply will be realized by maximizing the use of the imported supply and local supplies. Bromide removal and the sewer trunkline move contribute to the water quality aspects of reliability in this grant. Groundwater usage cannot be fully utilized due to the bromide levels which result in DBPs in the distribution. A pilot project will be built and tested to remove bromide from the source waters thus reducing DBPs. The project will result in a local supply that can be used fully which would otherwise be considered impaired. In 2005, storms showed the region how vulnerable the sewer line and various wells were due to damage incurred that year from the storms. The diversion of the sewer trunkline averts the damage and subsequent release of sewage into the Santa Clarita River. The break is considered imminent and a high risk to the surface and groundwater supply. Diversion of the sewer line out of the Santa Clara River protects the local supply from such a high risk to water quality. In addition removal of Arundo and Tamarisk from approximately 1,500 acres will increase the supply through a reduced demand from the river to ensure flow. In combination the projects support and improved the reliability of local supplies and reduce reliance on State Water Project water.

The Regional Water Management Group (RWMG) and stakeholders understand that local funding is and will remain central to addressing the Region's water management challenges and all parties are taking active steps through local funding measures and rate adjustments; however, a good portion of these funds will not be available to implement projects for many years. Proposition 84 funding will help the Region implement projects that are important first steps towards addressing their water resource and management needs.

Table 3-3 further identifies how each of the projects will address these goals and objectives.

TABLE 3-3
HOW PROJECTS ADDRESS PROPOSAL AND IRWM PLAN GOALS AND OBJECTIVES

PROJECT	Integrate water and watershed related planning efforts	Facilitate regional cooperation	Reduce Water Demand	Improve Operational Efficiency	Increase Water Supply	Improve Water Quality	Promote Resource Stewardship
SCV Water Use Efficiency Plan Programs (CLWA-4)	●	●	●	●	●		●
Santa Clara River-Sewer Trunk Line Relocation (NCWD-3)	●	●				●	
Santa Clarita Valley Southern End Recycled Water Project (VWC-1)	●	●	●	●	●		●
Electrolysis and Volatilization for Bromide Removal and DBP Reduction (CLWA-2)	●	●		●		●	
SCR, San Francisquito Creek Arundo & Tamarisk Removal Project (SC-1/USFS-1)	●	●	●		●	●	●

Regional Map

The five projects are shown on Figure 1. Figures 2 and 3 provide the IRWMP Region boundary and the hydrological features within the Region. During development of the 2008 IRWM Plan, no communities that met the definition as defined in the Water Code of a Disadvantaged Community (DAC) were identified. As such, none have been identified on the regional map.

Integrated Elements of the Proposal

The five projects in this Proposal, while separate and distinct from each other, together create a multifaceted approach to the fundamental issue in the Santa Clarita Valley, water supply reliability. The projects address water supply reliability in the following ways:

1. Santa Clarita Valley Water Use Efficiency Plan Programs - reduces demands on the regional water supply
2. Santa Clara River-Sewer Trunk Line Relocation Project - protects quality and availability of surface and groundwater supplies
3. Santa Clarita Valley Southern End Recycled Water project - enhances local water supplies without requiring additional imported water supplies
4. Electrolysis and Volatilization for Bromide Removal and DBP Reduction - protects the quality and ability to effectively utilize SWP supply
5. Santa Clara River, San Francisquito Creek Arundo and Tamarisk Removal Project - decreases loss of local water supply to noxious non-native weeds

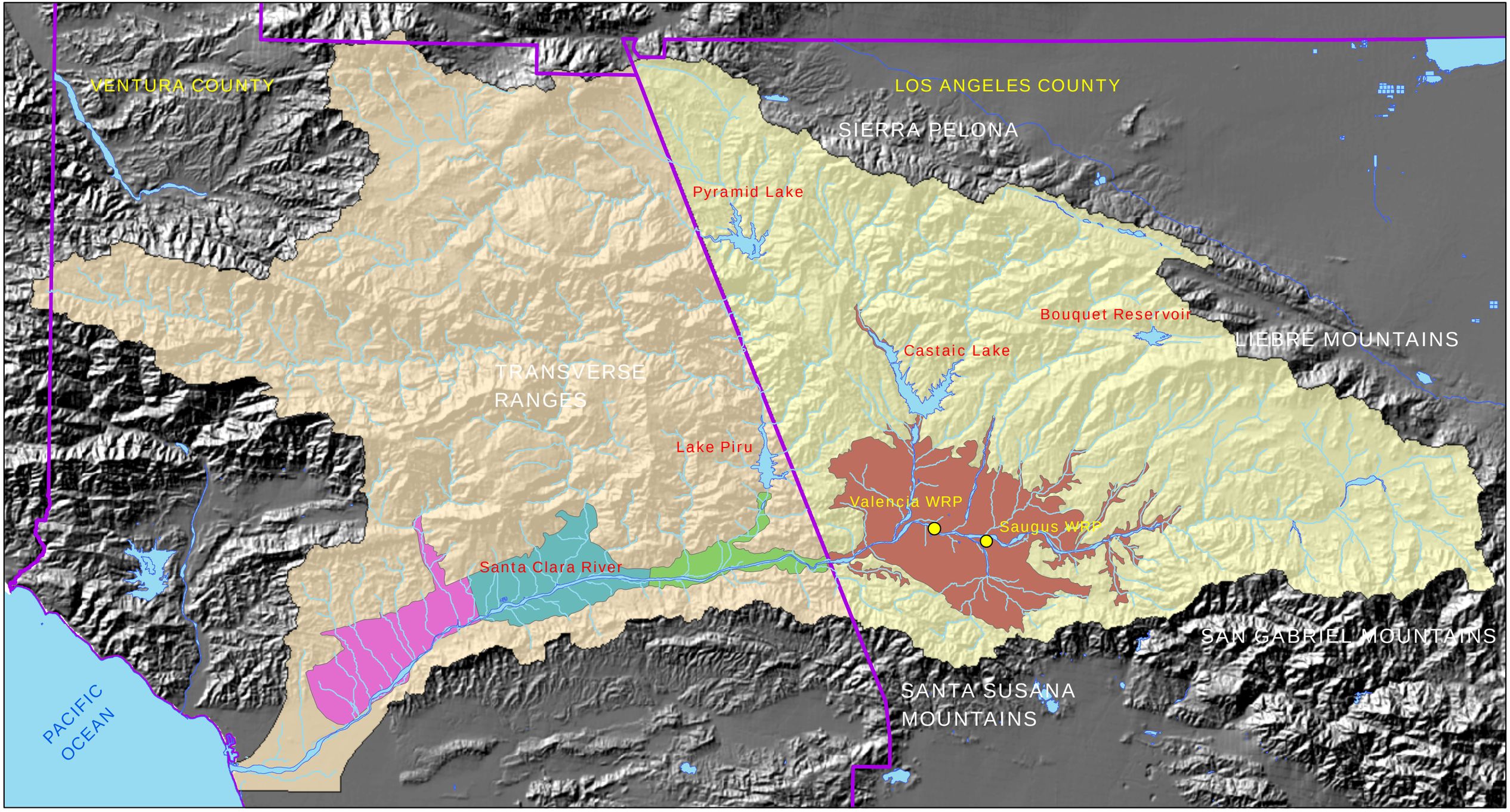
Conversely, because of the differing natures of the projects they represent a complete and whole approach to water supply management in the Santa Clarita Valley and Upper Santa Clara River. The suite of projects address the need to reduce water demand, increase water supply, improve and protect water quality, and promote resource stewardship.

Completed Work

This section identifies the status of work items for each project. For the Application, three status conditions are considered:

1. Work item complete as of application submittal date (January 7, 2011)
2. Work item is not complete as of application submittal date, but will be complete by June 1, 2011.
3. Work item will be completed after June 1, 2011.

June 1, 2011 is the assumed date of grant contract signature and all tasks completed after this date will be included as work items in the grant contract.



Legend

Water Reclamation Plants

Groundwater Basin

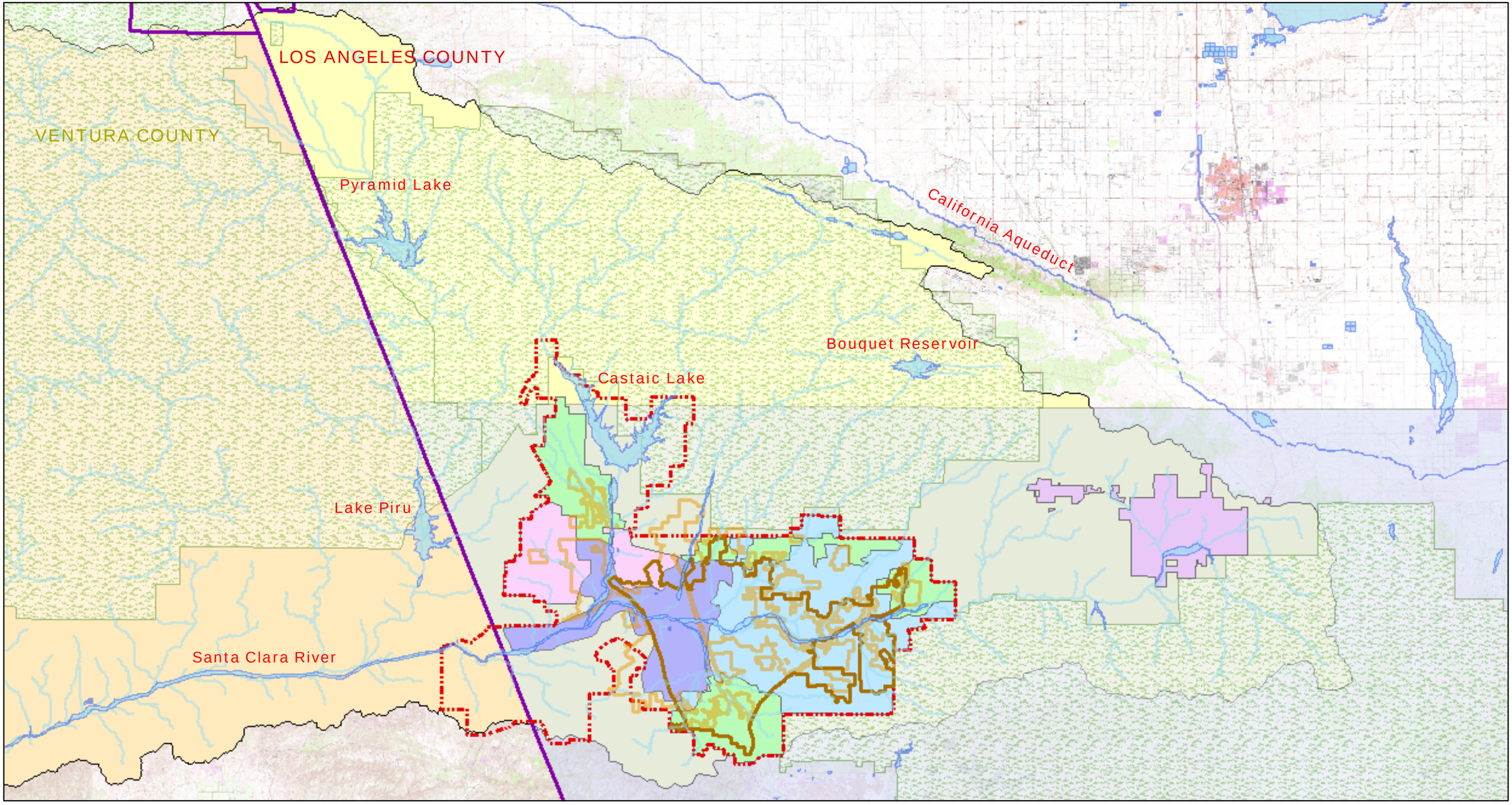
- EASTERN
- PIRU
- FILLMORE
- SANTA PAULA

Watershed

- Lower Santa Clara River
- Upper Santa Clara River

0 5 10 20 Miles

Figure 2
Upper Santa Clara River Watershed
Hydrologic Features



N
W E
S

Legend

Watershed
- Upper Santa Clara River
- Santa Clarita
- Santa Clarita Valley Sanitation District
- CLWA
- Valencia Water Company
- LA County WaterWorks District 36
- Santa Clarita Water Company
- Newhall County Water District
- LA County WaterWorks District 37
- US Forrest Service Boundary
- LA County Flood Control Boundary
- Lower Santa Clara River

0 1 2 4 6 8 10 Miles

Figure 3
Upper Santa Clara River Watershed/IRWMP Region

TABLE 3-4
STATUS OF CRITICAL PRE-CONSTRUCTION PROJECT WORK ITEMS

PROJECT	Land/Row Acquisition	Planning	Design/Engineering	Environmental Documentation	Permit Acquisition
SCV Water Use Efficiency Plan Programs (CLWA-4)	NA	Complete	NA	NA	NA
Santa Clara River-Sewer Trunk Line Relocation (NCWD-3)	June 2013	June 2013	June 2013	June 2012	June 2012
SCV Southern End Recycled Water Project (VWC-1)	Dec 2011	June 2011	June 2011	Feb 2011	June 2011
Electrolysis and Volatilization for Bromide Removal and DBP Reduction (CLWA-2)	NA	Aug 2011	Mar 2012	NA	Mar 2012
SCR, San Francisquito Creek Arundo & Tamarisk Removal Project (SC-1/USFS-1)	NA	Complete	Complete	Sept 2011	Sept 2011

Footnotes:

	Pre-construction work item complete as of January 7, 2011
	Pre-construction work item complete by June 1, 2011
	Pre-construction work item complete after June 1, 2011
	Not Applicable (NA)

Existing Data and Studies

Numerous scientific and technical studies and feasibility reports have been conducted within the Santa Clarita Valley in support of both the IRWM planning process and for development of the implementation projects included in this Proposal. These studies and reports provide the basis for demonstrating the scientific and technical merit of the Proposal, support the statement of benefits contained throughout, and demonstrate the feasibility of successful project implementation.

Documented studies and the collection of data have been completed or are in the process of being completed for all five projects in this Proposal supporting the claimed benefits. An electronic copy of each applicable study is included on a CD provided with the Proposal and a summary of the types of information contained in each reference is provided by individual project below. The CD includes five separate folders, one for each project's reference materials.

A brief discussion of how each of these projects' technical documentation supports the technical adequacy and feasibility is provided in greater detail below. The Work Plans will identify the data reporting and monitoring requirements for each project within the Proposal.

Santa Clarita Valley Water Use Efficiency Plan Programs (CLWA - 4)		
No.	**Reference**	**Relevance**
CLWA -4.1	Santa Clarita Valley Water Use Efficiency Strategic Plan, Final Draft. August 2008. A & N Technical Services, Inc.	The Santa Clarita Valley Water Use Efficiency Strategic Plan (the Plan) includes programs and projects that will most effectively reduce the per capita water use in the Valley. The goal of the Plan is to achieve a long term reduction in water demand of at least 10% over the next 20 years.
CLWA-4.2	2005 Urban Water Management Plan for Castaic Lake Water Agency, CLWA Santa Clarita Water Division, Newhall County Water District, Valencia Water Company	This plan provides a comprehensive overview of the water supply goals for the future of the Santa Clarita Valley and identifies the current and planned water conservation programs and projects within the CLWA service area.

Technical Adequacy (SCV WUE Programs)

Castaic Lake Water Agency and the four purveyors all utilize water conservation methods as a means to reduce demand during drought conditions. CLWA prepared its 2005 UWMP, and is currently preparing the 2010 plan, with the four local retail water agencies in the Santa Clarita Valley: CLWA's Santa Clarita Water Division (SCWD), Newhall County Water District (NCWD), Valencia Water Company (VWC), and Los Angeles County Waterworks District No. 36 (LACWWD #36). In addition, CLWA and the four agencies are all members of the California Urban Water Conservation Council (CUWCC) and each signatories to the Memorandum of Understanding Regarding Urban Water Conservation in California. Signatories pledge to develop and implement the 14 Best Management Practices (BMPs) that are intended to reduce long-term urban water demands. These BMPs are functionally-equivalent to the demand management measures specified in California Water Code Section 10631(f)(1).

The 2005 UWMP (Reference CLWA-1.2), and 2010 UWMP when completed, forecasts water supply demands and supplies, characterize the region's water portfolio, and describe the BMPs proposed to be implemented for water savings and conservation efforts in their service area. These documents show that the CLWA-4 Program will meet BMP No. 5 – Large Landscape Conservation Programs and Incentives through implementation of the Large Landscape Audit and Incentive Program, Santa Clarita Valley CII Audit and Customized Incentive Program, and Santa Clarita Valley Landscape Contractor Certification and Weather-based Irrigation Controller Program, led by CLWA.

Project Feasibility (SCV WUE Programs)

The feasibility of CLWA-4 is documented in Reference CLWA-4.1, by experts in the field of water conservation technologies, and through direct experience from implementing these programs in prior years. Implementation of ET Controllers at part of the Santa Clarita Valley Landscape Contractor Certification and Weather-based Irrigation Controller Program will result in measurable and quantifiable results in water savings in the Santa Clarita Valley, as will the ET controllers and efficient spray nozzles through the Large Landscape Audit and Incentives Program. Each of the

programs being implemented have been implemented in the past, with quantified savings documented.

Santa Clara River-Sewer Trunk Line Relocation (NCWD-3)		
No.	**Reference**	**Relevance**
NCWD-3.1	Sand Canyon Sewer Relocation Report (Alliance Land Planning & Engineering, November 2009)	This report provides a preliminary solution on how to relocate the sewer line outside of the River.

Technical Adequacy (SCR-Sewer Trunk Line)

A preliminary solution describing the design of the sewer location has been prepared with the associated costs and details. Past experience with storms in 2005 has shown the vulnerability of infrastructure in the river. The preliminary design report states that the old sewer line can be abandoned after the rerouting has been completed.

Project Feasibility (SCR-Sewer Trunk Line)

The feasibility of this project has been described in the preliminary design report. Easement rights have been identified and the communities the line serves will continue uninterrupted as described in the report. City and County sewers that connected to the trunk line will also be rerouted and these connections to the main line will be abandoned.

Santa Clarita Valley Southern End Recycled Water Project (VWC-1)		
No.	**Reference**	**Relevance**
VWC-1.1	Recycled Water Master Plan, 2002 (Kennedy/Jenks Consultants, August 2002)	This report identifies and prioritizes areas in the Region where recycled water can replace potable water. Findings of the report were utilized to develop conclusions and recommendations for construction of facilities to expand the beneficial use of tertiary treated water and to develop a plan to meet existing and future recycled water demands throughout the CLWA service area. (i.e., the "Regional Recycled Water Backbone System")
VWC-1.2	Recycled Water Master Plan, Final Program Environmental Impact Report (PEIR) (March 2007)	The environmental documentation for the Recycled Water Master Plan was a programmatic document designed to address the impacts from twelve phases of recycled water development.
VWC-1.3	Valencia Water Company, Recycled Water Study, for The South End Projects (Dexter Wilson Engineering, February 2010)	This technical memorandum provides a comprehensive analysis of the proposed alignment and a discussion of identified end users. This analysis was used to determine which pipelines and pumping stations within the CLWA's service area would be put forward as part of this Proposal to connect the existing recycled water system, in order to meet irrigation demands of new and previously identified recycled water users.

Technical Adequacy (SCV Southern End Recycled Water)

The feasibility and preliminary design for the VWC-1 project was built upon a number of prior studies evaluating potential opportunities for recycled water use in CLWA service area. An initial Reclaimed Water System Master Plan (RWMP) was completed for CLWA in 1993 (Kennedy/Jenks, 1993). An update to the 1993 RWMP was completed in 2002 (Kennedy/Jenks, 2002) to address the changes in the area that had occurred in the last decade. In addition, an Environmental Impact Report (EIR) for the RWMP was recently prepared in 2007 (Bon Terra, 2007) to evaluate the potential impacts of the proposed RWMP.

Project Feasibility (SCV Southern End Recycled Water)

There is considerable information to support the feasibility of a recycled water market within the Santa Clarita Valley, and where recycled water can specifically replace potable water. The information gathered included market assessments, local jurisdictional requirements, utility impacts, right-of-way requirements, permitting, and customer demand analyses. Reference VWC-1.1 recognized that current WRP production is not anticipated to be adequate to meet the total demands of the CLWA service area. However, as potable water demands increase, recycled water production will similarly increase, thereby becoming more available to support non-potable uses in lieu of potable imported water or groundwater. Thus, the implementation plan outlined in the 2002 RWMP was phased to utilize the increases in plant production. Alternative pipeline alignments were then evaluated to determine cost effectiveness and feasibility in Reference VWC-1.3, which lead to the decision to recommend the Project put forth in this Proposal. Both studies (References VWC-1.1 and VWC-1.3) concluded that the Project was feasible for implementation on a per acre cost basis and on the identified recycled water demands.

Electrolysis and Volatilization for Bromide Removal and DBP Reduction (CLWA-2)		
No.	**Reference**	**Relevance**
CLWA-2.1	Electrochemical removal of bromide and reduction of THM formation potential in drinking water. David Eugene Kimbrough and I. H. Suffet. Water Research. Volume 36, Issue 19, (November 2002)	This paper presents the proposed new water treatment process that lowers the concentration of bromide in drinking water and thus, lowers the THM formation potential. This is a preliminary study done with very small volumes showing promise as a technique to reduce brominated THMs. It also proves that it may be a technique useful for other brominated DBPs such as haloacetic acids and bromate.
CLWA-2.2	An Electrochemical Reactor to Minimize Brominated DBPs in a Conventional Treatment Plant. David Eugene Kimbrough and I. H. Suffet. AwwaRF #91202 (2008)	Report Investigates the Practicality of Using Electrolysis to Remove Brominated DBPs from Drinking Water
CLWA-2.3	Electrochemical Process for Removal of Bromide from California State Water Project Water. David Eugene Kimbrough and I. H. Mel Suffet. Aqua – Journal of Water Supply and Technology, 55.3 (2006)	Report Investigates the Practicality of Using Electrolysis to Remove Brominated DBPs from California State Water Project Water

Technical Adequacy (Bromide Removal)

There are a number of technical peer reviewed reports that support the technical adequacy of the CLWA-2 project. The two referenced are chosen because they demonstrate the capability of the water treatment technology being proposed, the use of the technology on waters used by CLWA, and the sufficiency of a pilot project. Reference CLWA-2.1 provides that with small volumes of water, the implications for water treatment show promise as a technique to reduce brominated THMs as well as for other brominated DBPs such as haloacetic acids and bromate.

Reference CLWA-2.2 goes even further to confirm that the treatment technology when used on SWP water under various conditions, demonstrated a removal of up to 35% of bromide and up to 60% less disinfection by-products measured.

Project Feasibility (Bromide Removal)

Reference CLWA-2.2 summarizes the results of a first-phase bench, pilot, and feasibility study investigating the practicality of using electrolysis to remove bromide and brominated DBPs from drinking water. The study was funded by CLWA and AwwaRF. The authors, listed in the blue box, are currently seeking funding for a second phase Tailored Collaboration project to further demonstrate this technology's efficacy, develop a preliminary design of the electrolytic reactor, evaluate safety issues, and quantify capital and O&M costs.

Santa Clara River, San Francisquito Creek Arundo and Tamarisk Removal Project (SC–1/USFS–1)		
No.	**Reference**	**Relevance**
SC-1/USFS-1.1	Upper Santa Clara River Arundo/Tamarisk Removal Program – Santa Clarita Site Specific Plan (Ventura County Resource Conservation District/AMEC , July 2005)	As part of the SCARP, the Site Specific Project implements the removal of noxious and invasive plants from a highly visible 150-acre area of the river located in the City of Santa Clarita. This project has acted as a low impact arundo and tamarisk removal demonstration project for interested agencies, landowners, and non profits; and stimulates public interest in, and support for, such removal projects. It has also resulted in the removal of arundo and tamarisk in a highly infested reach of the Santa Clara River, Bouquet Creek and San Franciquito Creek
SC-1/USFS-1.2	Upper Santa Clara River Watershed Arundo and Tamarisk Removal Program – Long Term Implementation Plan (Ventura County Resource Conservation District, June 2006)	The Upper Santa Clara River Watershed Arundo/Tamarisk Removal Plan (SCARP) provides guidance to stakeholders for implementing procedures to remove invasive, non native plants. The primary objective of the plan is to guide and facilitate the implementation of arundo and/or tamarisk removal projects within the upper Santa Clara River watershed of Los Angeles County. This effort has resulted in a successive effort, Santa Clara River Invasive Plant Removal (SCIPR) plan.

Santa Clara River, San Francisquito Creek Arundo and Tamarisk Removal Project (SC–1/USFS–1)		
No.	**Reference**	**Relevance**
SC-1/USFS-1.3	Upper Santa Clara River Watershed Arundo/Tamarisk Removal Plan Programmatic Environmental Impact Report (EIR) Final (Ventura County Resource Conservation District) February 2006	Implementation of SCARP requires guidance to stakeholders/landowners for implementing future invasive, nonnative plant removal projects. The goal of the SCARP is to facilitate future arundo or tamarisk removal projects of any size by any agency, organization, or individual landowner within, but not limited to, the 500-year floodplain, or primary, secondary, or tertiary tributaries of the Santa Clara River in its upper watershed. The timing, size, location, removal method, and sponsors of such projects are currently unknown. The programmatic Environmental Impact Report (EIR) analyzed the potential environmental impacts that may result from the implementation of the SCARP, which encompasses implementing removal and treatment methods for a regional program, rather than the impacts of future, individual projects. This programmatic EIR also identifies mitigation measures that would be applied to reduce or eliminate impacts of projects at treatment locations
SC-1/USFS-1.4	Permits from the US Fish and Wildlife Service, California Department of Fish and Game SAA, and Army Corps of Engineers – 2004 - present	Permitting allows for any landowner to remove arundo and tamarisk from their property that impacts the Santa Clara River or its tributaries in Los Angeles County. Any actions require meeting the standard best management practices and mitigations in SCARP and the programmatic EIR.
SC-1/USFS-1.5	Upper Santa Clara River Watershed Arundo/Tamarisk Removal Plan Programmatic Environmental Impact Report (EIR) Statement of Findings and Statement of Overriding Considerations, VCRCD 2006	The EIR determined potential short-term significant impacts to noise, water quality, and biological resources. Due to the long term environmental benefits of the project, a Statement of Overriding Considerations of was adopted by the VCRCD.

Technical Adequacy (SCR Arundo and Tamarisk Removal)

The Upper Santa Clara River Watershed Arundo/Tamarisk Removal Plan (SCARP) represents a regional project for the removal of non-native and invasive arundo and tamarisk. This program has consisted of demonstration projects, permitting, and educational programs as well as low impact removal. An EIR prepared in 2006 showed the impacts of removal of arundo and tamarisk to the Santa Clara River and its tributaries. The findings showed that without removal the plants would continue to spread and decrease the current water resources and a decline in native habitats. The project found that herbicide application with the proposed approach will not impact the groundwater quality. Education programs for landowners and stakeholders further expanded the efforts to remove these species. The best management practices (BMP) will be utilized and were examined in the EIR with and without the use of herbicides.

Project Feasibility (SCR Arundo and Tamarisk Removal)

In 2005 the feasibility of this project was established though the site specific plan which used BMPs for arundo and tamarisk removal. The SCARP included an implementation aspect which included development of a phased plan to remove arundo/tamarisk on 297 acres of land owned by the City of Santa Clarita. The site specific implementation project covered approximately 75 acres of the 297-acre site and removed 20 acres of arundo and tamarisk. As a result of the SCARP effort, several stakeholders have begun to work together to form the Santa Clara River Invasive Weeds Task Force to better coordinate and communicate about invasive species throughout the watershed. Permitting from the US Fish and Wildlife service to private landowners allows for the continued removal of arundo and tamarisk as well as community participation.

Work Plan Part II. Work Plans

The following sections include detailed project specific information about the five projects within this Proposal.

Proposal Work Plans
1. Santa Clarita Valley Water Use Efficiency Plan Programs (CLWA-4)
2. Santa Clara River-Sewer Trunk Line Relocation (NCWD-3)
3. Santa Clarita Valley Southern End Recycled Water Project (VWC-1)
4. Electrolysis and Volatilization For Bromide Removal and DBP Reduction (CLWA-2)
5. Santa Clara River, San Francisquito Creek Arundo and Tamarisk Removal Project (SC–1/USFS–1)

Santa Clarita Valley Water Use Efficiency Plan Programs (CLWA - 4)

Project Purpose and Need

The Santa Clarita Valley Water Use Efficiency Strategic Plan (SCV WUE Plan) identifies programs and projects that will most effectively reduce per capita water use in the Santa Clarita Valley. The goal of the Plan is to achieve a long-term reduction in water demand of at least 10 percent over the next 20 years. Newly passed State legislation, Senate Bill 7X-7, signed into law in November 2009, calls for progress towards a 20 percent reduction in per capita water use by 2020. The Santa Clarita Valley Water Use Efficiency Program (CLWA-4) will implement four programs identified in the SCV WUE Plan, to help meet these goals. CLWA-4 would also help meet the IRWMP's objectives of reducing water demand, improving operational efficiency, enhancing water supply and improving water quality. This is accomplished by decreasing demand and the need to convey and treat imported water and by reducing runoff from irrigation to local channels.

Project Background

The four programs being implemented by CLWA-4 are the Santa Clarita Valley Large Landscape Audit and Incentive Program, the Santa Clarita Valley Commercial, Industrial and Institutional (CII) Audit and Customized Incentive Program, the Santa Clarita Valley Landscape Contractor Certification and Weather-based Irrigation Controller Program, and the High Efficiency Toilet Rebate Program. By improving indoor and outdoor water use efficiency and conserving water, this project will reduce water demand, avoid costs for purchase of imported water, increase water supply reliability for the CLWA customers, and improve operational flexibility for CLWA. The programs have already had one successful year of implementation with an estimated water savings of at least 986 AF, and now seek expansion consistent with the SCV WUE Plan.

Implementation of all four programs will result in a phase-in of savings in 2011 through 2013. By 2014, the programs will be fully implemented, achieving a maximum annual savings amount of 613 AF. These savings will be sustained through 2020. Over the life of the project, total water savings will amount to 6,580 AF.

Project Description

The Project implements two years of the following four programs. Project specifications for each of the programs have been excerpted from the SCV WUE Plan and are provided at the end of this Work Plan.

Santa Clarita Valley Large Landscape Audit and Incentive Program

The program will offer customized water audits, equipment rebates (incentives), and water budgeting to public and private sector large landscape sites with high water use. At the onset, the key targets will be the City of Santa Clarita Landscape Maintenance Districts, Los Angeles County Parks and Homeowner's Associations. Rebates (incentives) are offered for water-saving devices including high efficiency nozzles and weather based irrigation controllers.

Santa Clarita Valley CII Audit and Customized Incentive Program

Approximately 19% of Santa Clarita Valley water is consumed by Commercial, Industrial and Institutional (CII) customers. As a result, this program is tailored to allow customized incentives for site-specific opportunities. The program offers comprehensive water audits and reporting of cost effective recommendations in a clear and concise format with a focus on payback. The program will target high opportunity customers including: amusements parks, colleges, universities and school districts, hotels, hospitals and other customers identified by the retail water agencies. The key decision maker will be identified and contacted via phone to enlist participation. After the audit is conducted, customers will then be offered a per acre-foot saved rebate (incentive) based upon the findings of the audit.

Santa Clarita Valley Residential Landscape Contractor Certification and Weather-based Irrigation Controller Program

The Program would target all landscape contractors in the Santa Clarita Valley and would allow residents to participate as well. Landscape contractors and residents would be invited to water use efficiency training workshops where they would be trained in the classroom and in the field on the importance of general water use efficiency, properly installed weather-based irrigation controllers, hydrozoning, and high distribution uniformity. After attending the training, landscape contractors and residents would be eligible to receive free weather-based irrigation controllers and free high efficiency nozzles. After installing the weather-based irrigation controller, our consultant would inspect the installation to make sure it was done correctly.

High Efficiency Toilet Rebate Program

This is an open rebate program for residential customers, budgeted at approximately 500 rebates per year. The Santa Clarita Valley has a high percentage of new housing stock with 40 percent of single family and 33 percent of multi-family housing units built after 1992. As a result, these homes already utilize water saving low flow toilets. The key savings opportunity lies within older residential sites that are utilizing non-ULF toilets and would benefit greatly from upgrading to a high-efficiency toilet (1.28 gallons per flush).

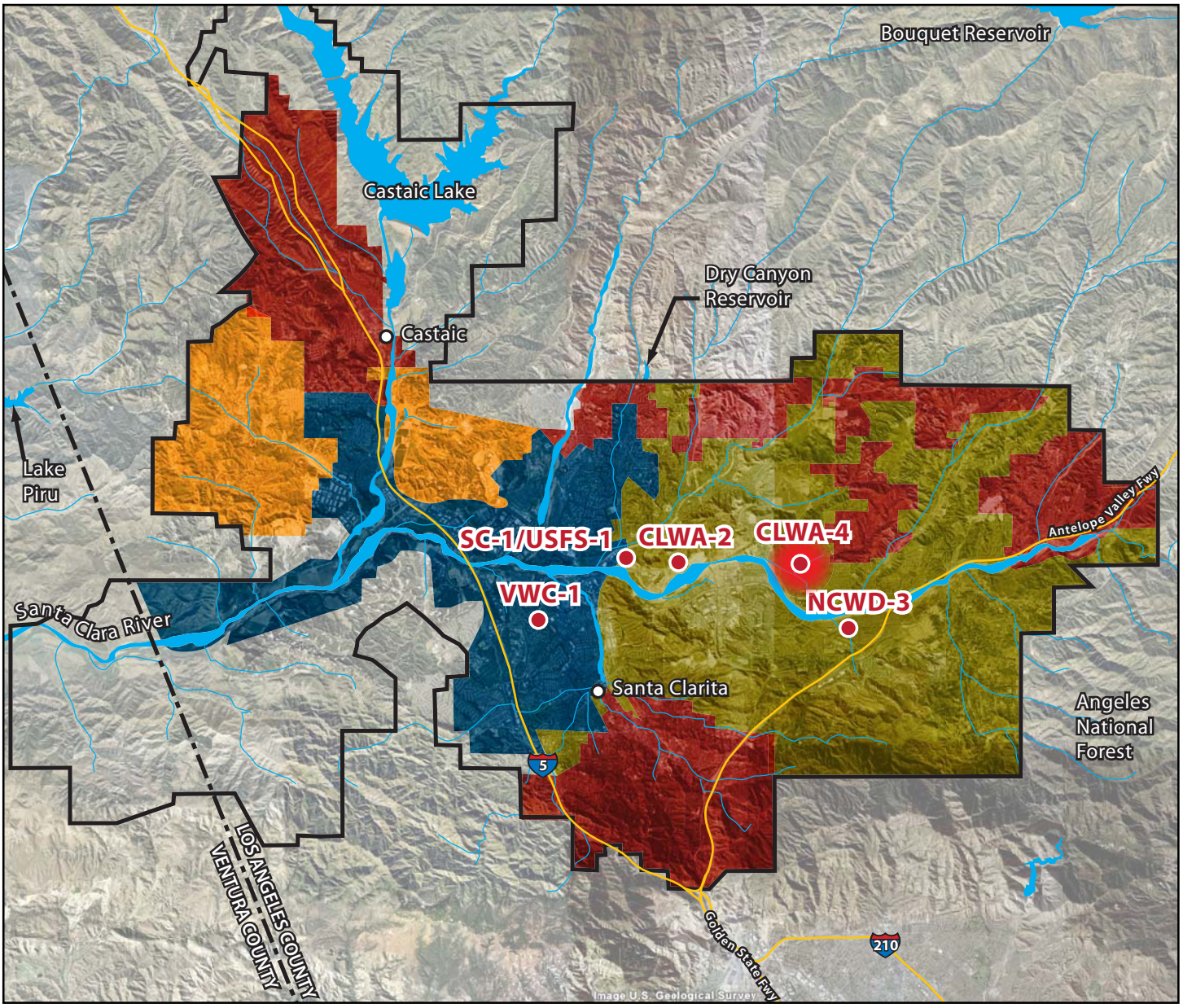
Project References (provided on CD)

- CLWA-4.1 Santa Clarita Valley Water Use Efficiency Strategic Plan, Final Draft. August 2008. A & N Technical Services, Inc.

- CLWA-4.2 2005 Urban Water Management Plan for Castaic Lake Water Agency, CLWA Santa Clarita Water Division, Newhall County Water District, Valencia Water Company

Project Map

See Figure CLWA-4 for a project map of the SCV WUE Plan Programs Project.



LEGEND:

- CLWA Service Area
- L.A. County Waterworks District #36
- Newhall County Water District
- Santa Clarita Water Division
- Valencia Water Company
- Project Location
- Service Area Wide
- Interstate Line
- County Line

N

Sources:
1. Castaic Lake Water Agency Service Area
2. Google Earth - Image U.S. Geological Survey

CLWA-4
SCV Water Use Efficiency Plan Programs

Project Timing and Phasing

The project is two years of a five-year program. The programs have already had one successful year of implementation and now seek expansion consistent with the SCV WUE Plan.

All of the project components are identified in the SCV WUE Plan.

Work to be Performed

The tasks necessary to complete the Project are summarized in Table CLWA-4, and discussed in greater detail below.

TABLE CLWA-4

Task Number	Work Task Title	Budget	Schedule	
			Start Date	End Date
a)	**Direct Project Administration Costs**	$ 130,000	Jun 2011	Jul 2013
a.1	Administration	$ 80,000	Jun 2011	Jul 2013
a.2	Reporting	$ 50,000	Jul 2011	Jul 2013
a.3	Labor Compliance Program	See Note 1	Jun 2011	Jul 2013
b)	**Land Purchase/Easement**	$ NA	NA	NA
c)	**Planning/Design/Engineering/Environmental Documentation**	$ NA	NA	NA
c.1	Assessment and Evaluation	$ NA	NA	NA
1.1	*Geotechnical Investigations, Data Collection and Surveying*	$ NA	NA	NA
1.2	*Preparation of Technical Memoranda*	$ NA	NA	NA
1.3	*Preliminary Design Report*	$ NA	NA	NA
c.2	Final Design	$ NA	NA	NA
c.3	Environmental Documentation	$ NA	NA	NA
c.4	Permitting	$ NA	NA	NA
d)	**Implementation**	$ 1,620,000	Jun 2011	Jul 2013
d.1	Consultant Costs	$ 902,000	Jun 2011	Jul 2013
d.1.1	Programs Implementation	See Note 2	Jun 2011	Jul 2013
d.2	Purchase Conservation Equipment	$ 172,000	Jun 2011	Jul 2013
d.3	Rebates	$ 546,000	NA	NA
e)	**Environmental Compliance/Mitigation/Enhancement**	$ NA	NA	NA
f)	**Construction Administration**	$ NA	NA	NA
g)	**Other Costs**	$ 208,000	Jun 2011	Jul 2013
g.1	Public Outreach	$ 208,000	Jun 2011	Jul 2013
g.2	PAEP	See Note 3	Jul 2011	Dec 2011
h)	**Construction/Implementation Contingency**	$ NA	NA	NA
	GRAND TOTAL	$ 1,958,000		

Notes: 1) Costs for Task a.2 and Task a.3 have been included in Task a.1.
2) Costs for Task d.1.1 have been included in Task d.1
3) Costs for Task g.2 have been included in Task a.1.

a) Direct Project Administration Cost

Task a.1, a.2: Administration and Reporting

Project administration includes administration of grant and construction contracts, preparation of reports and plans, coordination of design contracts, and other activities as required to complete design and construction. This project will be coordinated by a designated project manager employed by the Agency. The project manager will be the point of contact for the project's duration and be responsible for the day-to-day activities of the project and all reporting, and will coordinate with various agencies regarding permitting, environmental, design, and construction issues. The budget for this project assumes the project manager will spent an average of 60 hours per month on this project over the entire 2-year duration.

CLWA, as the project proponent and granting agency, will prepare and submit quarterly progress reports and invoices. CLWA will require the contractors to submit monthly reports to be submitted with the invoices. The progress reports will describe activities undertaken and accomplishments of each task during the milestones achieved, and any problems encountered in the performance of the work under this contract. A final summary report will be prepared and submitted once the project is completed.

Task a.3: Labor Compliance Program

The Agency will implement a Labor Compliance Program in accordance with the Labor Code 1771.8.

Direct Project Administration Submittals	
Quarterly Reports	Ongoing by quarter
Labor Compliance Program	June 2011 – July 2013
Final Summary Report at Project Completion	June 2013

b) Land Purchase/Easement

Not applicable. No land purchases or right-of-way easements are required for implementing CLWA-4.

c) Planning/Design/Engineering/Environmental Documentation

Task c.1: Assessment and Evaluation

The technical feasibility of the programs being implemented are described and supported by the SVC WUE Plan. No additional design reports or investigations are needed.

Planning/Design/Engineering Submittals	
SVC Water Use Efficiency Plan	Completed (2008)

Task c.2: Final Design

The technical feasibility of the programs being implemented are described and supported by the SVC WUE Plan. No additional design reports or investigations are needed.

Task c.3: Environmental Documentation
The CII and Weather-based Irrigation Controller Programs were determined to be Categorically Exempt from CEQA under the CEQA Guidelines, Section 15061 (b)(3). Since no construction is needed, no permits or environmental compliance documentation are required.

Task c.4: Permitting
No permits are required for implementation of the WUE Plan programs.

d) Implementation

Task d.1: Consultant Costs
Consultant costs include the ongoing costs associated with program advertising and outreach, training of contractors for the installation conservation devices and for the verification of proper installation of all conservation equipment and water-saving changes in landscaping.

Task d.1.1: Programs Implementation
The four water use efficiency programs will be implemented over the course of the two year period of 2012-2013. The consultant will implement the program by the following types of tasks which are detailed on the project specifications for each of the programs provided at the end of the Work Plan. Tasks will include:

- Targeted solicitation of key customers
- Public and private auditing process for site visits
- Recommendations for applicable incentives
- Water use efficiency education and workshops
- Application for available high efficiency nozzles, WBICs, and other incentives
- Certification and training

Task d.3: Purchase Conservation Equipment
Purchase of weather-based irrigation controllers (WBICs) and minor types of conservation equipment for all four programs will be required periodically throughout the two-year period.

Task d.4: Rebates
Rebates will be offered to residential and CII customers for water conserving equipment, including high-efficiency toilets, high-efficiency sprinkler nozzles, WBICs, and commercial and industrial water conserving devices.

Implementation Submittals	
Notice to Proceed	June 2011
Notice of Completion	July 2013
Final Construction Summary Report	July 2013

e) Environmental Compliance/Mitigation/Enhancement

The CII and Weather-based Irrigation Controller Programs were determined to be Categorically Exempt from CEQA under the CEQA Guidelines, Section 15061 (b)(3). No mitigation or enhancement is required.

f) Construction Administration

Not applicable. No costs for construction administration are being requested.

g) Other Costs

Task g.1: Public Outreach

Program requires substantial amounts of outreach to inform targeted customers of program availability. This availability of water use efficiency programs is a component of a broader outreach social marketing strategy to inform the public of the benefits of water conservation and the tools to accomplish that goal. Marketing occurring in a variety of media outlets and dedicated materials for the water conservation programs are developed in addition to their being advertised in general water conservation outreach. Water conservation outreach is generally on an annual basis with program commencement and creation of new materials each spring. Water Use Efficiency programs advertising would be more on an as needed basis as classes are offered and customers notification opportunities identified.

Task g.2: PAEP

A Preliminary Assessment and Evaluation Plan (PAEP) will be prepared for the assessment and evaluation of project performance and to identify measures that can be used to monitor progress towards achieving project goals per the State Water Resources Control Board (SWRCB) PAEP guidance document. A Monitoring Plan and Quality Assurance Project Plan are not required.

Other Submittals	
PAEP	December 2011

h) Construction/Implementation Contingency

Costs for contingency for construction/implementation have not been assumed as a separate budget item.

Procedures

No other procedural agreements are required. CLWA, as the contracting entity, will be the recipient of the grant and act as the grant administrator.

Standards

The Weather Based ET Controllers Installation and Education Program will utilize Weathermatic ET Controllers, whose performance has been proven in the conservation community. The life expectancy, results, and potential savings as a result of using the Weathermatic ET Controller technology, has been repeatedly documented.

Workshops will be designed and constructed in accordance with the appropriate standards, including those from ASTM, AWWA, Standard Specifications for Public Works Construction ("Green

Book"), other construction industry entities, and appropriate sections of the Health and Safety Code.

Acquisition of Land or ROWs

The project does not require a land purchase or easement.

Building Materials, Project Design Status, and Bid Solicitation Efforts

Building materials as appropriate for the projects are contained in CLWA-4, and are in accordance with ASTM, AWWA, and construction industry standards, and will be consistent with the materials used on other regional conservation projects. The merits of the materials used are provided for by the industry standard. Design for this type of project is considered 100% or complete. Sections of the SCV WUE Plan describing the programs are attached.

Permits

No permits will be required to complete CLWA-4.

Status of Preparation and Completion of Environmental Compliance Requirements

The proposed Project was determined to be exempt from CEQA.

The tribal notification requirement (PRC §75102) is not applicable to this project, as there are no California Native American tribes that are on the contact list maintained by the Native American Heritage Commission that have tribes that have traditional lands located within the area of the proposed project. The project would not involve any development or land disturbance that would impact cultural resources.

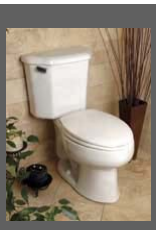
Data Management and Monitoring Deliverables

The data management and monitoring procedures for the Project will be developed in the PAEP, provided for in Task g.1. Data for the Project will be collected in accordance with State databases as appropriate, such as IWRIS, in addition to SWAMP QAPP data reporting requirements as well as GAMA Program protocols.

Other Work Items

No other work items are anticipated to complete this project. CLWA-4 is not a recharge or groundwater management project. It is possible that CLWA-4 could have an indirect positive impact to the underlying groundwater basin by reducing demand, thereby decreasing the region's dependence on groundwater, reducing overdraft, and increasing groundwater levels.

CLWA prepared a groundwater management plan in accordance with the provisions of Water Code Section 10753.7, which was originally enacted by AB 3030, for its wholesale service area. The general contents of CLWA's groundwater management plan (GWMP) were outlined in 2002, and a detailed plan was drafted and adopted in 2003. A copy of the GWMP is provided as (Att1_IG1_Eligible_3of5) to this application.



Solution for BMP 2

Santa Clarita Valley High Efficiency Toilet Rebate Program

Why Offer This Program?

Although the Santa Clarita Valley has an estimated 66 percent saturation rate for water efficient toilets (67 percent of single family toilets and 64 percent of multi-family toilets), there is significant opportunity for water savings in targeting the remaining old toilets, and saving even more water by promoting new "High Efficiency Toilets" throughout the service area.

Since 1992, only ULF toilets can be sold in the United States. Although this was a major advancement in residential water efficiency, there is still more that can be achieved. It is time to "raise the bar" and promote the newer high efficiency toilet (HET) technology which saves even more water.

The Santa Clarita Valley has a high percentage of new housing stock with 40 percent of single family and 33 percent of multi-family housing units built after 1992. As a result, these homes already utilize water saving ULF toilets. The savings opportunity lies within older residential sites that are utilizing non-ULF toilets.

Program Design

This is an open rebate program for residential customers, budgeted at approximately 500 rebates per year. Customers will be offered the following incentives for replacing a non-ULFT with an HET:

- Single family = **$100** rebate
- Multi-family and mobile home = **$100** rebate for HET replacement

Customers would be able to download program application form from utility website. Once new product is purchased and installed, customer completes application form and attaches original receipts. Then, the customer would be sent a rebate check or get a credit on their water bill.

New or Existing?	***Technology***	***Target Market***
Modified Program	High Efficiency Toilets	Single, Multi, Mobile home Non-ULFT households

Market Data

Pre 1992 Toilets: Single Family

	Total Toilets	Remaining non-ULF Toilets	Percent Remaining of Pre-1992	All Toilets	Remaining Potential Savings AFY
VWC	50,186	13,725	47%	73%	307
SCWD	41,238	15,813	47%	62%	354
NCWD	20,565	7,291	47%	65%	163
LA36	2,600	790	46%	70%	18
Total SF	114,589	37,619	47%	67%	843

Pre 1992 Toilets: Multi-Family

	Total Toilets	Remaining non-ULF Toilets	Percent Remaining	All Toilets	Remaining Potential Savings AFY
VWC	11,741	2,740	46%	77%	61
SCWD	31,148	11,838	46%	62%	265
NCWD	5,960	3,090	46%	48%	69
LA36	179	97	46%	46%	2
Total MF	49,027	17,764	46%	64%	398
Grand Total	163,616	55,383	46.5%	66.2%	1,241

Program Production

HET Rebates: Single-Family

	2009	2010	2011	2012	2013	5-Year Total
VWC	105	105	105	105	105	524
SCWD	104	104	104	104	104	522
NCWD	37	37	37	37	37	185
LA36	5	5	5	5	5	25
Total	251	251	251	251	251	1,256

HET Rebates: Multi-Family

	2009	2010	2011	2012	2013	5-Year Total
VWC	105	105	105	105	105	524
SCWD	104	104	104	104	104	522
NCWD	37	37	37	37	37	185
LA36	5	5	5	5	5	25
Total	251	251	251	251	251	1,256

Program Savings

A total of 2,512 HETs would be installed in the first five years of the program. A total of 6,030 HETs with the ongoing program of 500 per year until 2019 will save a total of **4,223 acre-feet** of water over the life of the product.

Program Costs

HET Rebate Program Cost per Acre Foot =

$475/acre-foot Single Family

$267/acre-foot Multi-Family

Santa Clarita Valley Large Landscape Audit & Incentive Program

Solution for BMP 5

Why Offer This Program?

In the Santa Clarita Valley, a high percentage of water is used for outdoor irrigation. Despite this high water use customers have little understanding of ways to alleviate excessive watering while still maintaining the health of their plants and turf.

Large landscape sites can be categorized into two types: public and private sector. Private sector customers, both property owners and Homeowner's Associations, typically pay landscape professionals to keep their grass green. They do not control the irrigation, the landscape companies do. On the flip side the landscape companies do not pay the water bill and have no incentive to reduce water use. To achieve success we must get both the landscape professional and the property owner engaged.

Public sector sites such as parks are typically maintained by city staff and require a somewhat different approach than private sector. The program must obtain support from multiple departments and staff levels.

Program Design

The program will offer water audits, minor repairs, equipment incentives, and water budgeting to public and private sector large landscape sites with high water use. At the onset the key targets will be the City of Santa Clarita Landscape Maintenance Districts, Los Angeles County Parks and Homeowner's Associations.

Targeted customers, both public and private sector, will be contacted via phone to solicit participation. Private sector customers will be asked to invite their landscape service company to the audit whereas public sector customers will be asked to invite the on-site maintenance staff and their respective supervisors.

During the audit process, the field auditor will assess the efficiency of the irrigation system and identify leaks and repair opportunities. Minor repair of problems such as broken sprinkler lines and faulty spray heads will be performed.

Following the site visit, an analysis of the irrigation system's efficiency will be conducted to determine the proper watering schedule for the landscape. In addition a water budget will be developed based upon the size of their landscape. Using the information from the site visit and the analysis, a report will be generated with upgrade recommendations, available incentives, new irrigation schedules, a water budget and a cost/benefit analysis. If possible the report will be delivered in person to further educate the customer. In addition customer will be provided with regular communication regarding their performance to budget.

Included in the report will be an application for available incentives. The available incentives include: high efficiency nozzles and weather based irrigation controllers. In order to maximum the incentive it is

recommended that the incentive be customized based upon the customer's site and paid at a per acre foot saved valve. Using the report as back up documentation the customer would submit the application for incentive reimbursement. Then, the customer would be sent a rebate check or get a credit on their water bill.

New or Existing?	*Technology and/or Service*	*Target Market*
New program (existing pilot with the City of Santa Clarita)	▪ Audit ▪ Installation of efficient spray nozzles and weather based irrigation controllers ▪ Irrigation system minor repairs ▪ Water budgeting	Residential & commercial customers with 2 or more acres of irrigated landscape.

Program Production

Production	2009	2010	2011	2012	2013	5 Year Total
Initial Contact	140	140	140	140	140	700
Audited Sites	28	28	28	28	28	140

Program Savings

The 140 landscape audits in the first five years of the program, and another 140 in the second five years, will result in **8,400 acre-feet** in a program that sustains constant savings through 2030. [2]

Program Costs

Large Landscape Audit and Incentive Cost per Acre Foot = **$486/acre-foot**

[2] Lifetime savings result from 280 audits in the first ten years, and a total of 615 audits in a program that replicates at the end of savings life to sustain constant savings through 2030.

Santa Clarita Valley CII Audit & Customized Incentive Program

Solution for BMP 9

Why Offer This Program?

Approximately 19% of Santa Clarita Valley water is consumed by Commercial and Industrial customers. Unlike the residential market, commercial and industrial sites vary widely in their functionality and water consuming equipment.

As a result, water efficiency programs need to go beyond the menu-based programs to also allow customized incentives for site-specific opportunities. Because this is a smaller customer segment for Santa Clarita it is all the more important for the program to be tailored to the customer to identify the best opportunities.

Program Design

The program will offer comprehensive water audits and reporting of cost effective recommendations in a clear and concise format with a focus on payback. Recommendations will include both the site-specific opportunities such as waterbrooms at Magic Mountain or cooling tower modifications at the College of the Canyons. Customers will then be offered a per acre-foot saved incentive based upon the findings of the audit.

The program will target high opportunity customers. These customers include: amusements parks, colleges and universities, hotels, hospitals and other customers identified by the retail water agencies. The key decision maker will be identified and contacted via phone to enlist participation.

If possible the audit report will be delivered in person and fully explained to customer. The staff person delivering the report would be able to answers questions and motivate and aid the customer in accomplishing the recommended retrofits.

If the customer moves forward with the conservation measures they will be required to submit an application to the water agency. The application will be compared against the report and then the customer would be sent a rebate check or get a credit on their water bill.

A number of water audits have already been performed by Valencia Water Company and others. For sites that already have audits, the program will focus on achieving recommended conservation actions.

New or Existing?

Modified program

Technology and/or Service

- Audit
- Customized incentive for equipment retrofits

Target Market

Commercial and Industrial water users

Targeted equipment

- High efficiency toilets and urinals
- Waterbrooms
- Commercial/coin op HEWs
- Cooling tower conductivity controller
- Sub-meters for landscape

Market Data

Supplier	Freq.	Sum(ccfyr)	Mean(ccfyr)
VWC	1,910	4,351,654	2,278
SCWD	790	862,362	1,092
NCWD	450	513,687	1,142
LA36	5	9,088	1,818
	3,155	5,736,791	1,819

Program Production

Production	2009	2010	2011	2012	2013	5 Year Total
Initial Contact	316	316	316	316	316	1,578
Audited Sites	63	63	63	63	63	316

Program Savings

The 316 audits over the first five years of the program, and another 316 over the second five years will save **11,563 acre-feet** of water in a program that sustains constant savings through 2030. [3]

Program Costs

CII Audit and Customized Incentive Cost per Acre Foot = **$606/acre-foot**

[3] Lifetime savings result from 632 audits over ten years, and a total of 1,387 audits in a program that replicates at the end of savings life to sustain constant savings through 2030.

Solution for BMP 5

Santa Clarita Valley Landscape Contractor Certification and Weather-based Irrigation Controller Program

Why Offer This Program?

A large portion of Santa Clarita Valley water consumption is for residential outdoor water use. A new technology that is proving to save a tremendous amount of water savings is weather-based irrigation controllers (WBIC) or smart controllers. This is ideal for large lot sizes with excessive watering, WBICs save water by changing irrigation schedules much more frequently and more accurately than controllers that are manually set. WBICs follow either average historical data or real-time evapotranspiration (ET) through a radio frequency signal or on-site weather sensor.

Since WBICs are an emerging technology, they have limited availability on suppliers' shelves. The product is best obtained directly from manufacturers. Adding to the limited product availability, most customers do not know how to install and operate WBICs. To make things more complex typical landscape contractors and maintenance companies may not have sufficient incentive to install water efficient technology. They are paid to keep the customer's landscape green and do not pay the water bill. There can also be language issues to overcome.

These barriers have greatly impacted the quantity of WBICs being moved in the market. Water agencies, therefore, must rethink how WBICs can most effectively be introduced in the market. Because landscape service providers are the key influencer in the market chain it makes sense to leverage these companies.

It will be necessary to educate landscape service providers on the value of WBICs and installation guidelines as well as incentivize them to install them at customer sites. In addition to WBICs, replacement of high flow sprinkler nozzles with water efficient models will further reduce excessive water flows and increase spray quality for the residential homeowner. This measure will be offered under the program, as well.

Program Design

The Program would target all landscape contractors and maintenance companies in the Santa Clarita Valley. These companies would be invited to water efficiency training workshops where their staff would be trained in the classroom and in the field on the importance of general water use efficiency, properly installed WBICs, hydro-zoning, and high distribution uniformity. Each staff person as well as the landscape company would receive an official certification for attending the workshop and committing to implementing water use efficiency at their customer's sites. Proactive contractors would be encouraged to sign up for the California Landscape Contractors Association (CLCA) Water Manager Certification Program [http://www.clca.org].

End use customers would be marketed via their landscape contractors. A list of landscape contractors will be developed through local business licenses. These companies will be sent a direct mail piece inviting them to a water use efficiency workshop. The mailer will also highlight the benefits of the training &

certification and free WBICs.

The one day workshop consists of basic irrigation principles, irrigation scheduling, the value of WBICs and guidelines to proper installation. Classes should be taught in English and Spanish and offered at least every year. Every participant would receive a certificate for attending training. This certificate would allow them to install the Free WBIC or supervise installations.

After attending the training and receiving certification, landscape contractor would be eligible to receive Free WBICs and Free high efficiency nozzles. The contractors would receive one WBIC and one set of nozzles after the initial training. They would be required to install them at a customer's site within a participating Santa Clarita Valley water agency. The installation must be inspected and installed properly before they were eligible to receive additional product. As contractors need additional product they would submit an application to the utility or their program vendor and the product would be picked up at the water supplier's office. The first two – four installations for each installer would be required to have an inspection. Regular customers (not landscape contractors) would also be able to participate and attend the classes, but they get the equipment only for their home.

New or Existing?	***Technology and/or Service***	***Target Market***
NEW program	▪ Landscaper training and certification ▪ Weather based irrigation controllers ▪ HE spray nozzles	Customers of landscape service providers receiving certification

Program Production

Production	2009	2010	2011	2012	2013	5 Year Total
Initial Contacts	5	5	5	5	5	25
Personnel completing tra	25	25	25	25	25	126
Sites Retrofitted	301	603	904	1,206	1,507	4,522
Controllers	301	603	904	1,206	1,507	4,522
Sprinklerheads	6,030	12,059	18,089	24,119	30,149	90,446
Inspections	30	60	90	121	151	452

Program Savings

The 4,500 WBICs and 90,500 high efficiency nozzles installed over the five year program will save **26,596 acre-feet** of water in a program that replicates over time to sustain constant savings through 2030.

Program Costs

Landscape Contractor Certification/WBIC Program Cost per Acre Foot = **$184/acre-foot.**

Santa Clara River-Sewer Trunk Line Relocation (NCWD-3)

Project Purpose and Need

The Santa Clara River is dry most of the year. However, it is susceptible to flooding and high amounts of seasonal flows. Within the riverbed, Newhall County Water District (NCWD or District) maintains a portion of sewer trunk line in the Canyon Country area of Santa Clarita. When rainfall amounts are extremely large, the Santa Clara River swells and impacts the area occupied by the trunk line. The large River flow erodes the dirt around the sewer line and propels debris that could cause a line break. A line break would cause an unauthorized release of raw sewage in the Santa Clara River. Not only would a line break be detrimental to the ecosystems in and around the river, but also could affect domestic groundwater wells within the region. The project will meet the following objectives of the IRWMP: Improve Water Quality and Promote Resource Stewardship.

Project Background

NCWD has owned and operated this Sewer Trunk Line since the late 1960's and has previously combated sewer trunk line breakage by preventative maintenance and proactive responses. Nevertheless, the threat of an accidental release has become increasingly evident and relocation of the Sewer Trunk Line out of the riverbed is now a priority.

The project is proposed in phases, with Phase 1 being the engineering and planning associated with relocating the sewer trunk line out of the Santa Clara riverbed. Phase 2 would concentrate on the actual removal or the gravity feed portion of the sewer trunk line. Within Phase 2, construction activities would relocate the sewer flow fed by gravity, prior to the proposed sewer lift station, into the public right-of-way. In Phase 3, the construction of a sewer lift station, forced sewer main, and the remaining gravity feed portion of the sewer trunk line to complete the relocation project.

Project Description

Funding is being requested for Phase 1 of NCWD-3. Phase I of this Project was identified in the Sand Canyon Sewer Relocation Report (Alliance Land Planning and Engineering, 2009) as the first and critical step towards successfully completing the relocation project. Phase 1 consists of the design to relocate the sewer trunk line out of the Santa Clara riverbed, into the public right-of-way. Within Phase I, NCWD will plan, design, and engineer the safe relocation of the sewer trunk line. Funding is requested for river bank protection, land title requests, surveying, and the engineering report. Also included during this phase is the environmental planning that surrounds the construction of an alternate sewer line. CEQA documentation will be required and coordination and permitting from the Regional Water Quality Control Board, California Department of Fish and Game, Army Corps of Engineers, and Los Angeles County Flood Control District.

Project References (provided on CD)

- NCWD-3.1 Sand Canyon Sewer Relocation Report, Alliance Land Planning and Engineering. (November 2009)

Project Map

See Figure NCWD-3 for a project map of the Sewer Trunk Line Relocation project.

Project Timing and Phasing

The District segmented the relocation of the sewer trunk line into three phases. This phase (Phase I) deals strictly with planning, design, and engineering involved with relocating the sewer line out of the Santa Clara River, into the public right-of-way. Depending upon the outcome of the design, the remaining phases will be incorporated into the District's Capital Improvement Plan.

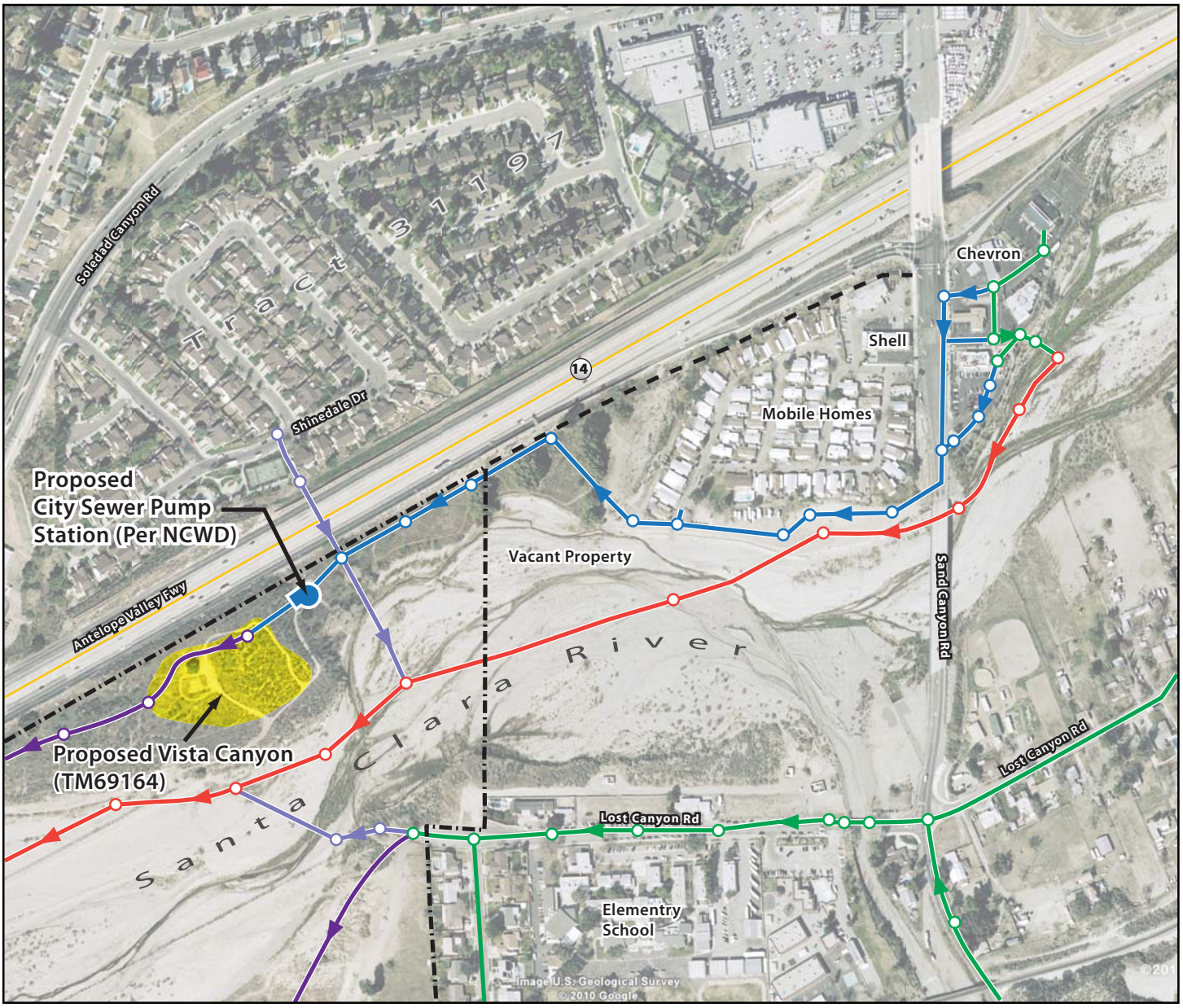
Work to be Performed

The tasks necessary to complete the Project are summarized in Table NCWD-3, and discussed in greater detail below.

TABLE NCWD-3

Task Number	Work Task Title	Budget	Schedule	
			Start Date	End Date
a)	Direct Project Administration Costs	$12,000	Jun 2011	Jul 2013
a.1	Administration	$3,000	Jun 2011	Jul 2013
a.2	Reporting	$3,000	Jul 2011	Jul 2013
a.3	Labor Compliance Program	$6,000	Jun 2011	Jul 2013
b)	Land Purchase/Easement	$20,000	Oct 2011	Jun 2013
c)	Planning/Design/Engineering/Environmental Documentation	$208,000	Jun 2011	Jun 2013
c.1	Assessment and Evaluation	$40,000	Aug 2011	Sep 2011
1.1	*Geotechnical Investigations, Data Collection and Surveying*	$40,000	Aug 2011	Sep 2011
1.2	*Preparation of Technical Memoranda*	N/A	N/A	N/A
1.3	*Preliminary Design Report*	N/A	N/A	N/A
c.2	Final Design	$100,000	Jun 2012	Jun 2013
c.3	Environmental Documentation	$50,000	Jun 2011	Jun 2012
c.4	Permitting	$18,000	Jun 2011	Jun 2012
d)	Construction/Implementation	N/A	N/A	N/A
d.1	Bid and Award	N/A	N/A	N/A
d.2	Mobilization and Site Preparation	N/A	N/A	N/A
d.3	Project Construction	N/A	N/A	N/A
d.4	Performance testing and demobilization	N/A	N/A	N/A
e)	Environmental Compliance/Mitigation/Enhancement	N/A	N/A	N/A
f)	Construction Administration	N/A	N/A	N/A
g)	Other Costs	N/A	Jul 2011	Jan 2012
g.1	PAEP	See Note 1	Jul 2011	Dec 2012
h)	Construction/Implementation Contingency	N/A	N/A	N/A
	GRAND TOTAL	$240,000		

Notes: 1. Costs for Task g.2 have been included in Task a.1.

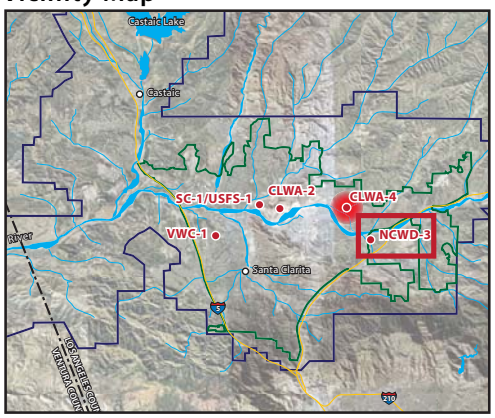


LEGEND:

- Proposed City Sewer (per NCWD)
- Proposed City Sewer (per VC)
- Existing City Sewer
- Existing NCWD Sewer
- Existing County Sewer
- Vista Canyon Boundary
- Existing Caltrans Fence
- Interstate Line

N

Vicinity Map



Sources:
1. Alliance - Sand Canyon Sewer Relocation Exhibit, 11/06/09
2. Google Earth - Image U.S. Geological Survey

NCWD-3
Santa Clara River Sewer Trunk Line Relocation (Phase 1) Project

a) Direct Project Administration Cost

Task a.1, a.2: Administration and Reporting

Project administration includes administration of grant and construction contracts, preparation of reports and plans, coordination of design contracts, and other activities as required to complete design and engineering that may not be directly related to those tasks. This project will be coordinated by a designated project manager by the District. The project manager will be the point of contact for the project's duration and will be responsible for the day-to-day activities of the project and all reporting to the granting agency, and will coordinate with the various agencies regarding permitting, environmental, and design issues. The budget for this project assumes the project manager will spend an average of 10 hours per month on this project over the entire 2-year duration.

The project manager for the District will prepare and submit quarterly progress reports and invoices to CLWA, the granting agency. The District will require the contractors to submit monthly reports to be submitted with the invoices. The progress reports will describe activities undertaken and accomplishments of each task during the milestones achieved, and any problems encountered in the performance of the work under this contract. A final summary report will be prepared and submitted once the project is completed. It is likely that the report will information such as: final design drawings and specifications; alternative site locations; monitoring results from geotechnical studies; easement problems encountered and the preventative and/or corrective actions taken; and copies of permits obtained.

Task a.3: Labor Compliance Program

The District will implement a Labor Compliance Program in accordance with the Labor Code 1771.8.

Direct Project Administration Submittals	
Quarterly Reports	Ongoing by quarter
Labor Compliance Program	June 2011 – July 2013
Final Summary Report at Project Completion	July 2013

b) Land Purchase/Easement

NCWD-3 will require land title requests from the City of Santa Clarita, and/or the County of Los Angeles for project work in the unincorporated area.

Land Purchase/Easement Submittals	
Land title requests	June 2013

c) Planning/Design/Engineering/Environmental Documentation

Task c.1: Assessment and Evaluation

Phase I of this Project was identified in the Sand Canyon Sewer Relocation Report (Alliance Land Planning & Engineering, 2009). This report provides a preliminary solution on how to relocate the sewer line outside of the Santa Clara River.

Subtask c.1.1: Geotechnical Investigations, Data Collection and Surveying

c.1.1.1: River Bank Protection

During Phase 3 of the project, it will be necessary to install a 8" gravity sewer running along the north side of the river, adjacent to the existing Mobile Home Park. This section of sewer will require soil cement bank protection. During Phase 1 the engineering and permitting of the soil cement bank protection is necessary prior to its actual construction.

c.1.1.3: Surveying

Prior to construction, surveyors must verify the alignment of the relocated sewer main. Surveyors are also needed to verify easements within properties and to locate boundaries associated with property transactions for the project.

Task c.2: Final Design

The project is currently at 10% (conceptual) design. This task includes preparation of an Engineering Report, which is schedule to conclude in June of 2013. When complete the Engineering Report will provide complete plans for pipe alignment. It will also provide details for the construction of a sewer lift pumping station and riverbank protection through soil cement bank enhancements. The Engineering Report will outline work to be completed in Phase 2 and Phase 3, allowing these subsequent phases to be completed independently. During the process of the Engineering Report completion, valuable information regarding the extent of the environmental documentation will be released. This information is expected to be released at the 30% design phase, so the two efforts can take place concurrently.

Planning/Design/Engineering Submittals	
Sand Canyon Sewer Relocation Report	Complete (2009)
Data Collection and Surveying Memoranda	September 2011
Engineering Report	June 2013

Task c.3: Environmental Documentation

The Project requires compliance with the California Environmental Quality Act as part of the environmental review process and will fulfill this requirement with preparation of an Initial Study/Mitigated Negative Declaration (MND). It is assumed that because environmental planning is planned to coincide with design from the early stages of development, 30% submittals, as well as coordination with those that have permitting over the site such as the Regional Water Quality Control Board, California Department of Fish and Game, and Army Corps of Engineers, that foreseeable impacts will either be designed around, or they will be mitigated for in order to justify preparation of the MND.

CEQA/NEPA Documentation Submittals	
CEQA Initial Study/Mitigated Negative Declaration	June 2012

Task c.4: Permitting

The Project requires acquisition of Waste Discharge Requirements from a Los Angeles Regional Water Quality Control Board's (RWQCB) National Pollutant Discharge Elimination System (NPDES) permit, a Section 1602 consultation with the California Department of Fish and Game (CDFG) for a Streambed Alteration Agreement, a Section 404 consultation with the Army Corps of Engineers

(ACOE) and Section 401 with the Los Angeles RWQWCB, and permits from the Los Angeles County Flood Control.

Permitting Documentation Submittals	
Los Angeles RWQCB NPDES Permit	June 2012
CDFG Section 1602	June 2012
ACOE 404/ Los Angeles RWQCB 401	June 2012
Los Angeles Flood Control District Permit	June 2012

d) Construction/Implementation

The proposed project is the first phase of NCWD-3 in which the District will plan, design, and engineer the safe relocation of the sewer trunk line. Construction is not associated with this phase.

e) Environmental Compliance/Mitigation/Enhancement

All costs for environmental compliance are assumed in Task c.3 and will be administered through the CEQA process.

f) Construction Administration

As there is no construction for this phase of the Project, no funds are being requested for construction administration.

g) Other Costs

Task g.1: PAEP

A Preliminary Assessment and Evaluation Plan (PAEP) will be prepared for the assessment and evaluation of project performance and to identify measures that can be used to monitor progress towards achieving project goals per the State Water Resources Control Board (SWRCB) PAEP guidance document.

The Monitoring Plan (MP) and Quality Assurance Performance Plan (QAPP) will be completed prior to the commencement of Phase 2, when construction is planned.

Other Submittals	
PAEP	December 2012

h) Construction/Implementation Contingency

As there is no construction for this phase of the Project, no funds are being requested for construction administration. No additional contingency for implementation has been assumed within the project budget.

Procedures

CLWA is the contracting entity that will be the recipient of the grant and act as the grant administrator. CLWA will execute an agreement with NCWD in order to implement the activities outlined in this proposal. No other procedural agreements are identified.

Standards

The project will be designed and constructed in accordance with the appropriate standards, including those from the Association of Testing and Materials (ASTM), American Water Works Association (AWWA), and other construction industry entities. All DPH requirements will be strictly enforced.

Acquisition of Land or ROWs

NCWD-3 will require land title requests from the City of Santa Clarita and/or the County of Los Angeles for the unincorporated area.

Building Materials, Project Design Status, and Bid Solicitation Efforts

Building materials to be used will be in accordance with ASTM, AWWA, and construction industry standards, and consistent with the materials used on other regional Agency projects. The project has not completed preliminary design, is currently at 10% (conceptual) and will not begin final design pending approval of environmental documents. Preliminary plans and specifications have not yet been drafted. Bids for construction will be solicited once final design is complete in accordance with contracting law.

Permits

Required permits are described above in Task c.4. Permits are anticipated to be obtained by June 2012.

Status of Preparation and Completion of Environmental Compliance Requirements

CEQA compliance is required for the project and based on the Initial Study that will be prepared, the appropriate environmental documentation will follow. It is assumed in the budget that an MND will be prepared. Mitigation measures as identified through the CEQA process will be implemented as appropriate.

The tribal notification requirement (PRC §75102) is not applicable to this project, as there are no California Native American tribes which are on the contact list maintained by the Native American Heritage Commission that have tribes that have traditional lands located within the area of the proposed project.

Data Management and Monitoring Deliverables

The data management and monitoring procedures for the Project will be developed in the PAEP, provided for in Task g.1. It is anticipated that data collected during this initial phase of the project will contribute to the State's Water Data Library and other State databases as appropriate, such as IWRIS and CERES.

Other Work Items

No other work items are anticipated to complete this project. NCWD-3 is not a recharge or groundwater management project. It is possible that NCWD-3 could have an indirect positive impact to the underlying groundwater basin by increasing reliability of the resource by protecting the recharge area, and improving the water quality.

CLWA prepared a groundwater management plan in accordance with the provisions of Water Code Section 10753.7, which was originally enacted by AB 3030, for its wholesale service area. The general contents of CLWA's groundwater management plan (GWMP) were outlined in 2002, and a detailed plan was drafted and adopted in 2003. A copy of the GWMP is provided as (Att1_IG1_Eligible_3of5) to this application.

Santa Clarita Valley Southern End Recycled Water Project (VWC-1)

Project Purpose and Need

The project is one phase of the CLWA's Recycled Water Master Plan, and it will help provide an important and reliable source of additional water for the Santa Clarita Valley, resulting in a more effective utilization of CLWA water supplies. The project will meet the following objectives of the IRWMP: Reduce Water Demand, Enhance Water Supply, and Promote Resource Stewardship.

Project Background

Valencia Water Company (VWC) is a privately owned water company and one of the four (4) domestic water purveyors that receive water from CLWA for distribution in the Santa Clarita Valley. CLWA imports State Water Project (SWP) water delivered to Castaic Lake through SWP facilities, which serves as the terminal reservoir of the SWP's West Branch. Water from Castaic Lake is treated at the CLWA's Earl Schmidt Filtration Plant or the Rio Vista Water Treatment Plant and is delivered to the domestic water purveyors through transmission lines owned and operated by CLWA.

VWC and the other three (3) water purveyors, 1) Los Angeles County Waterworks District #36 (LACWWD#36), 2) Newhall County Water District (NCWD), and 3) Santa Clarita Water Division (SCWD), primarily serve municipal and industrial (M&I) customers. In normal years, approximately 50 percent of the M&I demand within CLWA's service area is met with imported SWP water. The reliability of the SWP supply is subject to availability, which is a function of precipitation snowpack of present and past years and more recently regulatory cutbacks. Imported water deliveries can be curtailed during dry periods. When sufficient imported water is not available, the balance of demand is met with local groundwater supplies provided by the purveyors. However, local groundwater may also be limited in some areas, highlighting the need for additional reliable sources of water to meet current and future demands under all hydrologic conditions.

CLWA recognizes that recycled water is a critical component of their water supply portfolio. Implementing and expanding the recycled water system in the region provides a reliable source of water year round that can help offset reliance on imported water and local groundwater. By utilizing the effluent from the two water reclamation plants within the CLWA services area; the Saugus Water Reclamation Plant (WRP) and the Valencia WRP, CLWA and its purveyors can more efficiently allocate its potable water and increase the reliability of water supplies in the Santa Clarita Valley.

Project Description

VWC wants to expand the existing recycled water transmission and distribution system southerly to supply recycled water to additional customers as well as to potentially supply a source of recycled water to adjacent agencies. The source of recycled water to this area of the VWC system is the Valencia WRP. This facility treats approximately 15 million gallons per day (mgd) of sewage generated in the Santa Clarita Valley. This plant provides a source of recycled water supply to both the CLWA and VWC.

The VWC-1 Project includes the planning, designing, and construction of recycled water improvements of Phase 2C of the Recycled Water Master Plan. The potential recycled water use, preliminary pipeline alignments and sizing, and preliminary costs associated with the extension of the recycled water system was developed in a Technical Memorandum (TM), dated April 2010 (Reference VWC-1.3). The TM identified the potential recycled water users for the project, and in addition to supplying the VWC demands, several potential use sites were identified in the area that are within the jurisdiction of NCWD and the SCWD. The TM considered a few alternatives for the extension of the recycled water system to serve major VWC irrigation uses and provide a supply to NCWD, with the final alignment to be determined during a preliminary design study that identifies construction constraints. To determine the recommended facilities to serve the project, a hydraulic analysis was performed. The result was a project that will include the following components:

- 31,000 linear feet Transmission Main
- 1,000 linear feet Freeway Crossing
- Traffic Control, Traffic Loops, Re-striping, etc
- 2 Booster Stations; and
- 69 Service Meter Connections

Project References (provided on CD)

- VWC-1.1 Recycled Water Master Plan (Kennedy/Jenks Consultants, 2002)
- VWC-1.2 Recycled Water Master Plan, Final Program Environmental Impact Report (2007)
- VWC-1.3 Valencia Water Company, Recycled Water Study for the South End Projects (Dexter Wilson Engineering, 2010)

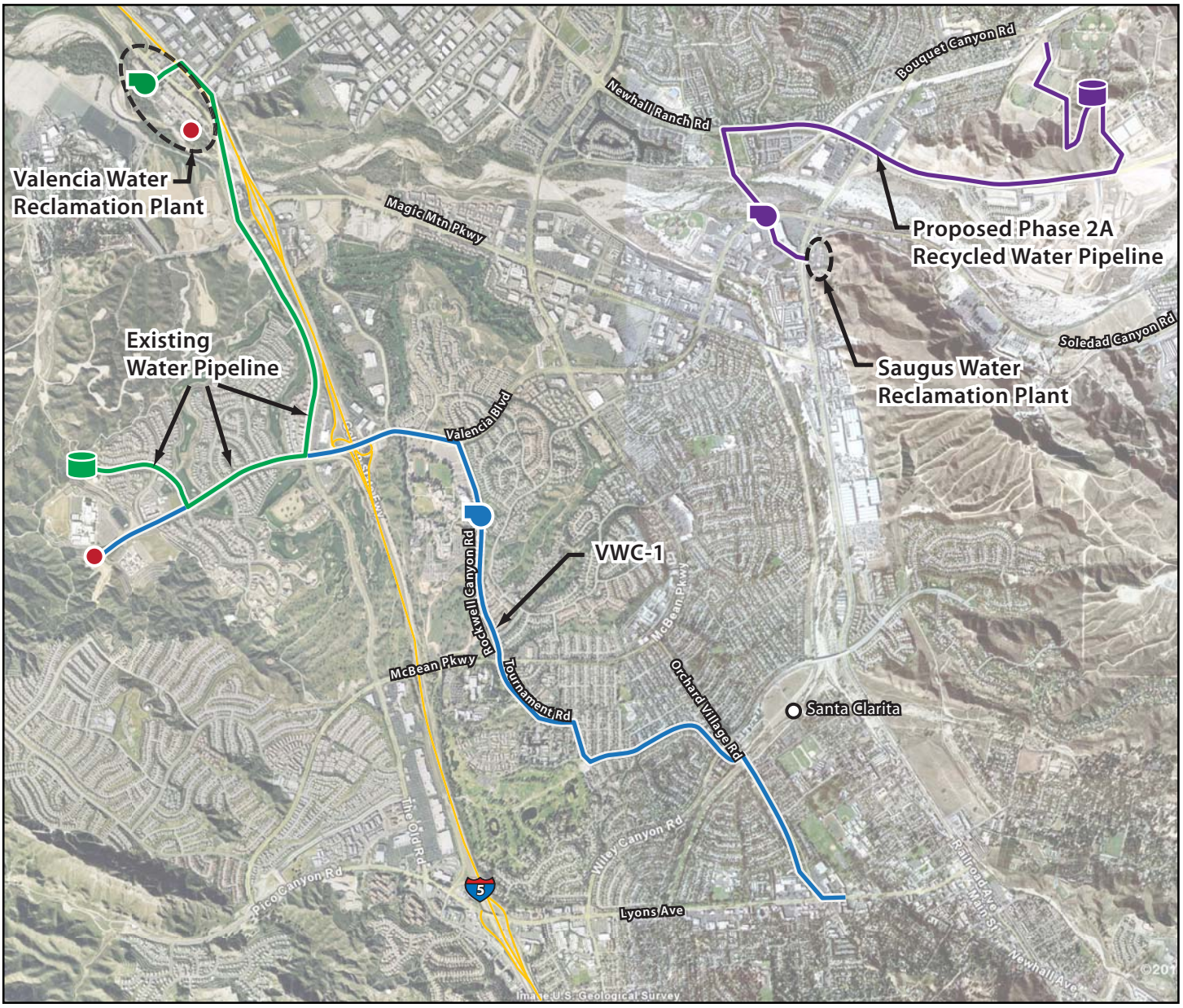
Project Map

See Figure VWC-1 for a project map of the VWC Southern End Recycled Water Project.

Project Timing and Phasing

All of the components or phases of CLWA's recycled water system are identified in CLWA's Recycled Water Master Plan (Reference VWC-1.1). Grant funds are being requested for only one section of Phase 2 of the Master Plan; Phase 2C (Project VWC-1).

While VWC-1 is a phase of a larger system, even if no future phases were approved, this project could continue to supply water since it is connected directly to the existing recycled water system and to identify end consumers.

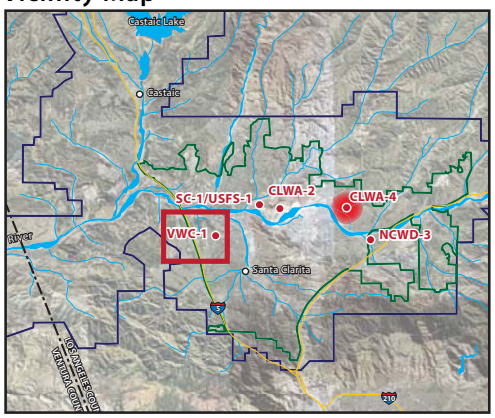


Legend:

- Water Pump Station
- Water Pipeline
- Water Storage Tank
- Interstate Line
- Monitoring Location

N

Vicinity Map



Sources:
1. Draft Recycled Water Phase 2C Planning & Preliminary Design Layout
2. Google Earth - Image U.S. Geological Survey

VWC-1
SCV Southern End Recycled Water Project

Work to be Performed

The tasks necessary to complete the Project are summarized in Table VWC-1, and discussed in greater detail below.

TABLE VWC-1

Task Number	Work Task Title	Budget	Schedule	
			Start Date	End Date
a)	Direct Project Administration Costs	$18,500	Jul 2011	Jul 2014
a.1	Administration	$15,000	Jul 2011	Jul 2014
a.2	Reporting	$3,500	Jul 2011	Jul 2014
a.3	Labor Compliance Program	See Note 1	Jul 2011	Jul 2014
b)	Land Purchase/Easement	$250,000	Jul 2011	Dec 2011
c)	Planning/Design/Engineering/Environmental Documentation	$497,000	Sept 2010	Jun 2011
c.1	Assessment and Evaluation	NA	NA	NA
1.1	*Geotechnical Investigations Data Collection and Surveying*	NA	NA	NA
1.2	*Preparation of Technical Memoranda*	NA	NA	NA
1.3	*Preliminary Design Report*	$ 250,000	Sept 2010	Feb 2011
c.2	Final Design	$ 245,000	Feb 2011	Jun 2011
c.3	Environmental Documentation	NA	Sept 2010	Feb 2011
c.4	Permitting	$2,000	Feb 2011	Jun 2011
d)	Construction/Implementation	$ 9,060,000	Aug 2011	Aug 2012
d.1	Project Construction	$9,060,000	Aug 2011	Aug 2012
e)	Environmental Compliance/Mitigation/Enhancement	NA	NA	NA
f)	Construction Administration	$1,058,000	Aug 2011	Aug 2012
g)	Other Costs	$10,000	Jun 2011	Dec 2012
g.1	PAEP, MP, QAPP	See Note 2	Jan 2011	Jun 2011
g.2	Post Construction Monitoring/Mitigation	$10,000	Aug 2012	Dec 2012
h)	Construction/Implementation Contingency	$150,000	Aug 2011	Aug 2012
	GRAND TOTAL	$11,043,500		

Notes: 1) Costs for Task a.3 have been included in Task a.1.
2) Costs for Task.g.1 have been included in Task a.1.

a) Direct Project Administration Cost

Task a.1, a.2: Administration & Reporting

Project administration includes administration of grant and construction contracts, preparation of reports and plans, coordination of design contracts, and other activities as required to complete design and construction. This project will be coordinated by a designated project manager employed by VWC. The project manager will be the point of contact for the project's duration and be responsible for the day-to-day activities of the project and all reporting, and will coordinate with various agencies regarding permitting, environmental, design, and construction issues. The budget for this project assumes the project manager will spend about 12 hours per month on this project during the first year while the project is undergoing construction and on average a couple of hours per month during the remaining two years for administrative duties.

VWC will prepare and submit quarterly progress reports and invoices to CLWA. VWC will require the contractors to submit monthly reports to be submitted with the invoices. The progress reports will describe activities undertaken and accomplishments of each task during the milestones achieved, and any problems encountered in the performance of the work under this contract. A final summary report will be prepared and submitted once the project is completed. In addition, the VWC will prepare Annual Recycled Water Production and Use reports and submit them to the Agency.

Task a.3: Labor Compliance Program
The Agency will implement a Labor Compliance Program in accordance with the Labor Code 1771.8.

Direct Project Administration Submittals	
Quarterly Reports	Ongoing by quarter
Labor Compliance Program	July 2014
Final Summary Report at Project Completion	July 2014

b) Land Purchase/Easement

An easement will be required from the City of Santa Clarita/College of the Canyons/County of Los Angeles to house a pump station and for pipelines in flood control channels (all in public rights-of-way). Negotiations with the Los Angeles County Flood Control District are currently underway to obtain encroachment permits for conducting the work within the public-right-of-way.

c) Planning/Design/Engineering/Environmental Documentation

Task c.1: Assessment and Evaluation
The project is currently at 10% (conceptual) design, with the completion of a Technical Memorandum (TM) that provides the preliminary recycled water demand analysis and pipeline alignment alternatives with connection to the existing Valencia WRP (Reference VWC-1.3). Background documentation was completed which includes a recycled water market assessment, hydraulic analysis, and storage requirements analysis. T he report recommends a preliminary design report be completed to design the final recycled water pipeline alignments.

Subtask c.1.1.3 Preliminary Design Report
The preliminary design report will be prepared to summarize the hydrologic, market assessment, design concept evaluation and justification, and provide a written description of the design including alternatives analysis, environmental impact assessment and economic estimates. Control plans and specifications, at 30% design, will be provided as an appendix in 11 x 17 format.

Task c.2: Final Design
Final Design Plans and Specifications are scheduled for completion by June 2011, with interim deliverables proposed as described, below. Plans and specifications will be prepared at the 60%, 90%, and 100% design completion levels. At each stage of completion, the project proponent's staff and outside technical experts will provide technical review and Quality Assurance/Quality Control (QA/QC) of the plans and specifications.

At the 60% Design stage, comments on the preliminary design report will be addressed and will include detailed pipeline and booster station design plans. Pipeline plans will include plan and profile sheets to detail existing utilities, proposed pipeline layout, and surveying data. Booster station plans will include pipeline, mechanical and electrical layouts and details.

At the 90% Design stage, complete design packages will be available for pipeline construction, booster station construction and operation, and permit requirements. In addition, a traffic control plan will be prepared for geotechnical and construction purposes in areas indicated in encroachment permits. Also, the pump station plans will include comprehensive piping, structural, mechanical, and electrical details. A comprehensive copy of the specifications will include front end documents, technical specifications and details, and Special Provisions. Final Design and construction documents shall include approved design and specification packages with signatures for construction.

Planning/Design/Engineering Submittals	
Technical Memorandum (Dexter, February 2010)	Completed (2010)
Preliminary Design Report (30% Design)	February 2011
60% Plans and Specifications	April 2011
90% Plans and Specifications	May 2011
Final (100%) Plans and Specifications	June 2011

Task c.3: Environmental Documentation

An Initial Study/Negative Declaration is being prepared for the project that is tiering off of the previously certified Programmatic Environmental Impact Report for the Recycled Water Master Plan. Mitigation included in the PEIR addresses construction related air quality and noise impacts. No tribal notification has occurred and the project will be developed within fully developed portions of Santa Clarita and there is no grading of raw land required. The IS/ND is scheduled for approval in early 2011.

CEQA/NEPA Documentation Submittals	
Initial Study/Negative Declaration	February 2011

Task c.4: Permitting

The Project requires acquisition of California Department of Fish and Game (CDFG) Section 1602 Streambed Alteration Agreement, and Army Corps of Engineers 404 and Regional Water Quality Control Board 401 permits for one channel crossing. Approval of the system is required from California Department of Public Health (DPH) and the Santa Clarita Valley Sanitation District. Title 22 was prepared by CDPH in accordance with Division 7, Chapter 7 of the Water Code. It establishes the quality and/or treatment processes required for an effluent to be used for a specific non-potable application. Encroachment permits from the City will be required to work within the public right-of-way.

Permitting Documentation Submittals	
CDFG Section 1602	June 2011
ACOE 404, RWCQB 401	June 2011
DPH, Title 22 Engineering Report	June 2011
City of Santa Clarita Encroachment Permit	June 2011

d) Construction/Implementation

Task d.1: Project construction

For each significant section of pipeline the following tasks will be included:

- Field surveying and marking
- Mobilization of equipment to site
- Implementation of traffic control plan
- Removal of asphalt and trench excavation
- Installation of drainage material
- Laying of pipe in trench and connection
- Connection to any recycled water systems ready for service
- Backfilling
- Repaving
- Demobilization and removal of traffic control measures
- Relocation to next pipeline segment
- Testing
- Shut down and connection to existing recycled water system

Pump station construction:

- Field surveying and marking
- Mobilization of equipment to site
- Site preparation and grading
- Piping installation
- Foundation construction and paving
- Pump Installation
- Housing construction
- Testing
- Finish construction including fencing

Construction Submittals	
Notice to Proceed	August 2011
Notice of Completion	August 2012

e) Environmental Compliance/Mitigation/Enhancement

CEQA compliance for the project is discussed in Task c.4. These efforts have not been budgeted separately and their costs are included in the Planning/Design/Engineering/Environmental Documentation Task.

f) Construction Administration

During construction, the VWC project manager and/or qualified engineering consultants will provide construction management and administration, including daily on-site observation; inspection of material and fabrication processes at the factory; testing of materials used for construction, including soils and concrete; and documentation of these activities.

Construction administration was estimated at approximately 10 percent of the total construction costs for the project.

Construction Administration Submittals	
Quarterly Construction Reports (includes contractors monthly progress reports and invoices)	Ongoing by quarter
Final Construction Administration Report	December 2012

g) Other Costs

Task g.1: PAEP, MP, QAPP

A Project Assessment and Evaluation Plan (PAEP) will be prepared for the assessment and evaluation of project performance and to identify measures that can be used to monitor progress towards achieving project goals per the State Water Resources Control Board (SWRCB) PAEP guidance document. A Monitoring Plan (MP) to develop monitoring procedures and a Quality Assurance Project Plan (QAPP) to identify the requirements and criteria for field laboratory procedures are required for this project, as the project will require monitoring of groundwater and possibly surface water.

Data collected will be in accordance with Surface Water Ambient Monitoring Program (SWAMP) QAPP and data reporting requirements as well as Groundwater Ambient Monitoring and Assessment (GAMA) Program protocols.

Task g.2: Post Construction Monitoring/Mitigation

This task will perform the monitoring and mitigation as specified in the documents prepared in Task g.1, post construction with results identified in the Final Construction Summary Report.

Other Submittals	
PAEP	June 2011
MP & QAPP	June 2011

h) Construction/Implementation Contingency

A construction/implementation contingency effort is included for this project to cover the cost of potential change orders during implementation of Task d activities. In addition, this contingency task includes management of unknown conditions that may be encountered during construction or implementation of the project, such as damage to existing utilities within the right-of-way or unearthing of archaeological resources during ground disturbance, and would also cover unexpected design constraints. Contingency was estimated to be 2% of the total cost of construction are based on professional knowledge for this type of project.

Procedures

VWC, who is overseeing the construction of the project, will partner with CLWA and other water retailers to implement the project. The project will require coordination with the Santa Clarita Valley Sanitation District in order to connect to the existing recycled water system, and for issuance of the required water supply permits. CLWA is the funding agency, and is also preparing the CEQA documentation for the project.

CLWA is also the contracting entity that will be the recipient of the grant and act as the grant administrator. CLWA will execute an agreement with VWC in order to implement the activities outlined in this proposal.

Standards

The project will be designed and constructed in accordance with the appropriate standards, including those from the Association of Testing and Materials (ASTM), American Water Works Association (AWWA), and other construction industry entities. All DPH requirements will be strictly enforced.

- California Code of Regulations, Title 8, Industrial Safety (CAL-OSHA) for safe employment conditions
- Uniform Building Code (UBC)
- International Building Code (IBC)
- National Electrical Code (NIC)

Acquisition of Land or ROWs

An easement will be required from the City of Santa Clarita/College of the Canyons/County of Los Angeles to house a pump station and for pipelines in flood control channels (all in public rights-of-way). Negotiations with the Los Angeles County Flood Control District are pending. Delays in the project schedule are not anticipated.

Building Materials, Project Design Status, and Bid Solicitation Efforts

Building materials to be used will be in accordance with ASTM, AWWA, and construction industry standards, and consistent with the materials used on other regional Agency projects. Project has not completed preliminary design, is currently at 10% (conceptual) and will not begin final design pending approval of environmental documents. A preliminary plan drawing is provided as Figure VWC-1, specifications have not yet been drafted. Bids for construction will be solicited once final design is complete in accordance with contracting law.

Permits

Required permits are described above in Task c.4. Permits are anticipated to be obtained by August 2011, prior to construction.

Status of Preparation and Completion of Environmental Compliance Requirements

An Initial Study pursuant to CEQA is currently being prepared for the Project and likely a Negative Declaration that tiers off previously certified Programmatic EIR is anticipated. Mitigation included in the PEIR addresses construction related air quality and noise impacts. No tribal notification has occurred and the project will be developed within fully developed portions of Santa Clarita and there is no grading of undeveloped land required. The IS/ND is scheduled for approval in early 2011.

The tribal notification requirement (PRC §75102) is not applicable to this project, as there are no California Native American tribes which are on the contact list maintained by the Native American Heritage Commission that have tribes that have traditional lands located within the area of the proposed project. The project would not develop and undisturbed areas that would have artifacts in an undisturbed state.

Data Management and Monitoring Deliverables

As described in Task g.1, data for the Project will be collected in accordance with the SWAMP QAPP data reporting requirements as well as GAMA Program Protocols.

Other Work Items

No other work items are anticipated to complete this project. VWC-1 is not a recharge or groundwater management project. It is possible that VWC-1 could have an indirect positive impact to the underlying groundwater basin by creating a new water supply thereby decreasing dependence on groundwater.

CLWA prepared a groundwater management plan in accordance with the provisions of Water Code Section 10753.7, which was originally enacted by AB 3030, for its wholesale service area. The general contents of CLWA's groundwater management plan (GWMP) were outlined in 2002, and a detailed plan was drafted and adopted in 2003. A copy of the GWMP is provided as (Att1_IG1_Eligible_3of5) to this application.

Electrolysis and Volatilization For Bromide Removal and DBP Reduction (CLWA-2)

Project Purpose and Need

Imported water from the Delta has water quality which is influenced by large amounts of organic material and salt water from San Francisco Bay that contributes bromide and chlorides. Additionally, bromide and TOC may react with disinfectants such as ozone, chlorine, or chloramines forming substances known as disinfection by-products (DBPs). Castaic Lake Water Agency (CLWA) disinfects its water at two treatment plants and has developed a technology that can remove bromide from State Water Project (SWP) water. The project would improve drinking water quality and allow for disinfectant treatment flexibility. The project would meet the IRWMP objectives of enhancing the water supply and improving water quality.

Project Background

Bromide is a non-volatile anion found in all natural waters. Although bromide is generally considered non-toxic at concentrations found in most drinking water sources, it reacts with a variety of commonly used disinfectants, most notably ozone and chlorine, to produce by-products that are of serious public health concern.

Ozone is a very powerful disinfectant that not only kills organisms that no other disinfectant can but also destroys organic chemicals that causes unpleasant tastes and odors. However, ozone can also interact with bromide, a naturally occurring salt, to produce bromate. As a result, CLWA is required to analyze the water leaving its two treatment plants for bromate once per month under federal regulations (State has also adopted D/DBP Rule). There are not currently any demonstrated technologies that can remove bromide in a cost effective fashion and removing it using existing technologies is cost prohibitive for large-scale water treatment.

CLWA has developed a technology that can remove bromide from imported SWP water. The process consists of oxidizing bromide to bromine and volatilizing the bromine. SWP water was passed through this unit under various conditions and the bromide removal was measured as well as the formation potential for various organic by products. Results from studies have shown up to 35% of the bromide removal and up to 60% less disinfection by-products measured.

However, the technology needs to be scaled up to determine if it is effective at treatment volumes that make it cost effective.

Project Description

The project is the construction of a pilot plant that would increase the size of the experimental treatment process shown to be effective at both removing bromide and reducing the concentrations of brominated disinfections byproducts which bromide causes. Water is passed between dimensionally stable anodes and the bromide is oxidized to bromine. Water is also oxidized to oxygen gas and hydrogen ions. This produces a very low pH near the surface of the anodes and large volumes of very fine gases, resulting in the volatilization of bromine. The pilot plant would

treat 350,000 gpd of influent water using this same process at the Rio Vista Water Treatment Plan in Santa Clarita.

Project References (provided on CD)

- CLWA-2.1 Electrochemical removal of bromide and reduction of THM formation potential in drinking water. David Eugene Kimbrough and I. H. Suffet. Water Research. Volume 36, Issue 19, (2002)

- CLWA-2.2 An Electrochemical Reactor to Minimize Brominated DBPs in a Conventional Treatment Plant. David Eugene Kimbrough and I. H. Suffet. AwwaRF #91202 (2008)

- CLWA-2.3 Electrochemical Process for Removal of Bromide from California State Water Project Water. David Eugene Kimbrough and I. H. Mel Suffet. Aqua – Journal of Water Supply and Technology, 55.3 (2006)

Project Map

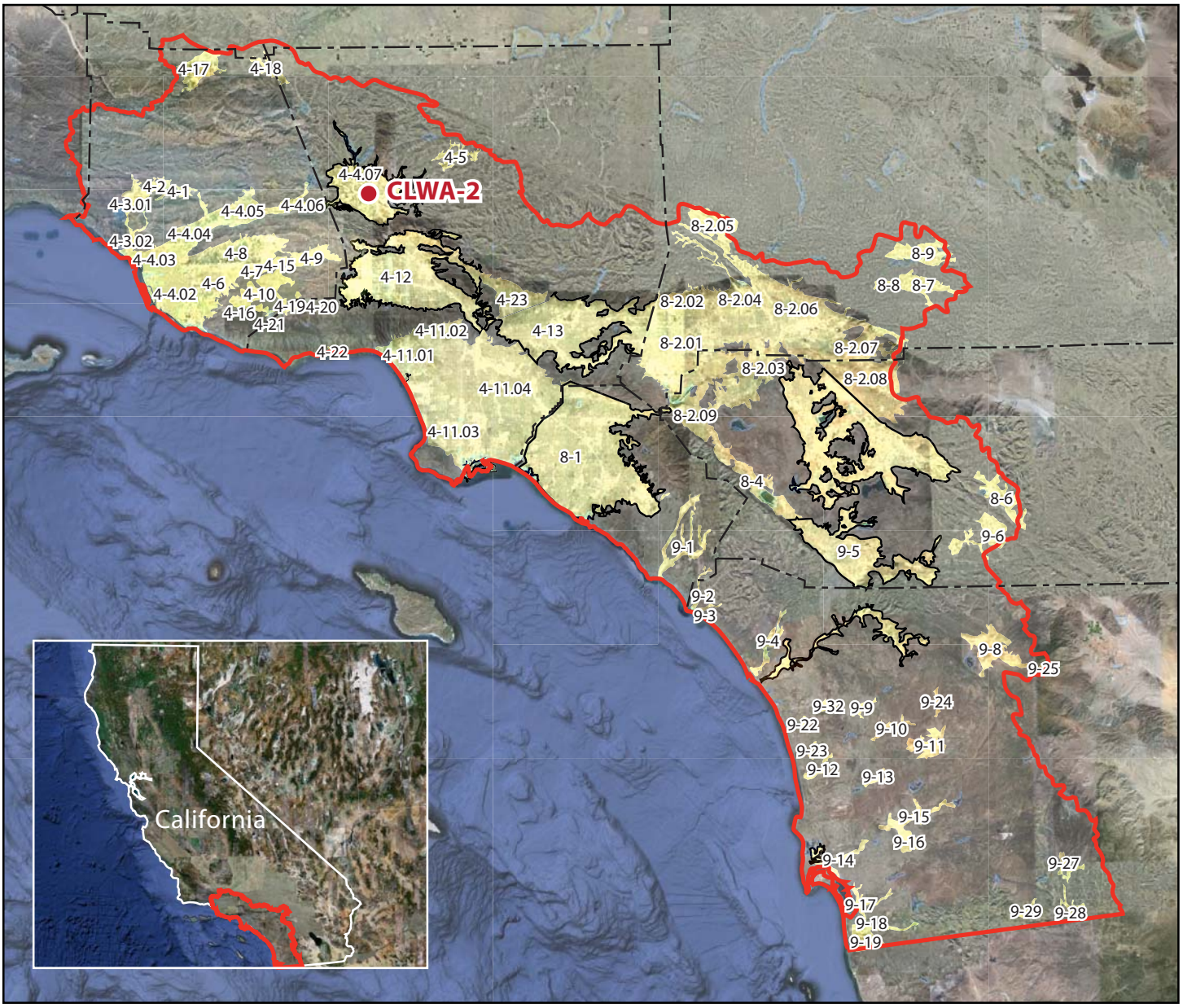
See Figure CLWA-2 for a project map of the Bromide Removal Project.

Project Timing and Phasing

The proposed project represents the intermediate scaling of the new treatment process. A successful small scale experimental project has already been completed. The pilot plant represents the next phase in project sizing. Ultimately, the project goal is to treat all of the influent at the Agency's treatment plant if the pilot plant is a demonstrated success.

Work to be Performed

The tasks necessary to complete CLWA-2 are summarized in Table CLWA-2, and discussed in greater detail below. Any costs not necessary for this project are noted as "NA."

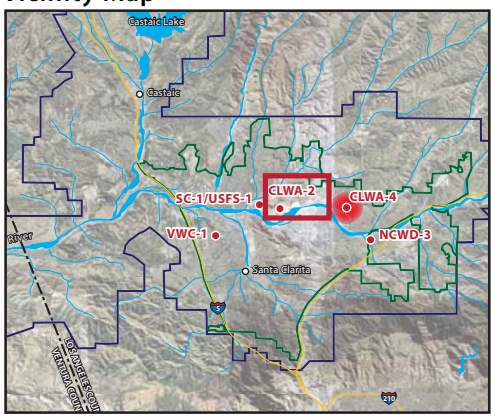


LEGEND:

- Groundwater Basin
- Hydrologic Region Boundary
- 4-17 Basin Number
- 8-2.05 Subbasin Number
- County Line

N

Vicinity Map



Sources:
1. South Coast Hydrologic Region, State of California - Department of Water Resources
2. Google Earth - Image U.S. Geological Survey

CLWA-2
Bromide Removal Project

TABLE CLWA-2

Task Number	Work Task Title	Budget	Schedule	
			Start Date	End Date
a)	**Direct Project Administration Costs**	**$130,000**	**Jul 2011**	**Jul 2013**
a.1	Administration	$80,000	Jul 2011	Jul 2013
a.2	Reporting	See Note 1	Jul 2011	Jul 2013
a.3	Labor Compliance Program	$50,000	Jul 2011	Jul 2013
b)	**Land Purchase/Easement**	**NA**	**NA**	**NA**
c)	**Planning/Design/Engineering/Environmental Documentation**	**$135,960**	**Jul 2011**	**Aug 2011**
c.1	Assessment and Evaluation	$3,960	Jul 2011	Aug 2011
1.1	*Geotechnical Investigations, Data Collection and Surveying*	NA	NA	NA
1.2	*Preparation of Technical Memoranda*	NA	NA	NA
1.3	*Preliminary Design Report*	$26,400	Jul 2011	Oct 2011
c.2	Final Design	$99,000	Oct 2011	Mar 2012
c.3	Environmental Documentation	NA	NA	NA
c.4	Permitting	$6,600	Oct 2011	Mar 2012
d)	**Construction/Implementation**	**$975,450**	**Mar 2012**	**April 2012**
d.1	Bid and Award	See Note 2	Mar 2012	April 2012
d.2	Mobilization and Site Preparation	$25,000	April 2012	April 2012
d.3	Project Construction	$937,250	May 2012	Jun 2012
d.4	Performance testing and demobilization	$13,200	Jun 2012	Jun 2012
e)	**Environmental Compliance/Mitigation/Enhancement**	**NA**	**NA**	**NA**
f)	**Construction Administration**	**$19,800**	**Mar 2012**	**Jun 2012**
g)	**Other Costs**	**See Note 3**	**Jan 2012**	**April 2012**
g.1	PAEP, MP, & QAPP	See Note 3	Jan 2012	April 2012
h)	**Construction/Implementation Contingency**	**NA**	**NA**	**NA**
	GRAND TOTAL	**$ 1.26M**		

Notes: 1) Costs for Task a.2 have been included in Task a.1.
2) Costs for Task d.1 have been included in Task d.3.
3) Costs for Task g.1 have been included in Task a.1.

a) Direct Project Administration Cost

Task a.1, a.2: Administration & Reporting

Project administration includes administration of grant and construction contracts, preparation of reports and plans, coordination of design contracts, and other activities as required to complete design and construction. This project will be coordinated by a designated project manager employed by the Agency. The project manager will be the point of contact for the project's duration and be responsible for the day-to-day activities of the project and all reporting, and will coordinate with various agencies regarding permitting, environmental, design, and construction issues. The budget for this project assumes the project manager will spent an average of 33 hours per month on this project over the entire 2-year duration.

CLWA, as the project proponent and granting agency, will prepare and submit quarterly progress reports and invoices. The progress reports will describe activities undertaken and accomplishments of each task during the milestones achieved, and any problems encountered in the performance of the work under this contract. A final summary report will be prepared and submitted once the project is complete.

Task a.3: Labor Compliance Program
The Agency will implement a Labor Compliance Program in accordance with the Labor Code 1771.8.

Direct Project Administration Submittals	
Quarterly Reports	Ongoing by quarter
Labor Compliance Program	July 2011
Final Summary Report at Project Completion	July 2013

b) Land Purchase/Easement

The project does not require a land purchase or easement. The proposed pilot project will be located on CLWA property.

c) Planning/Design/Engineering/Environmental Documentation

Task c.1: Assessment and Evaluation
This project is currently at the 10% (conceptual) design phase. Work is underway to produce a project report under a current Water Research Foundation (WRF) project (WRF 4216) and small reactor testing is nearly complete. All of the previous work completed under the WRF will be used as a basis for the development of a project Preliminary Design Report (PDR) under Task c.1.1.3.

Task c.1.1.3: Preliminary Design Report (PDR)
A PDR, equivalent to a 30% Design, is scheduled to be completed by October 2011. This report will be an extension of the final WRF 4216 project report and will be extended to include conceptual design of a 250 gpm pilot system including the evaluation of a testing site and preliminary project requirements such as power and water sources. A draft PDR will be delivered to the project proponent's staff and outside technical experts who will provide technical review and Quality Assurance/Quality Control (QA/QC) of the document. Any comments on the report will be incorporated into the report and a final PDR will be issued.

Task c.2: Final Design
Final Design will include complete design packages for the pilot system and required appurtenances including site preparations, and power and water feeds. Plans and specifications will be prepared at the 75% and 100% design completion levels. At each stage of completion, the project proponent's staff and outside technical experts will provide technical review and Quality Assurance/Quality Control (QA/QC) of the plans and specifications. A copy of the specifications will include front end documents, technical specifications, and drawings and details, as required. Given the size and the nature of the project, the construction of the pilot system may be handled as a turn-key project. Final Design and construction documents shall include approved design and specification packages with signatures for construction. Also, all permits will be obtained ready for contractors to process.

Planning/Design/Engineering Submittals	
Preliminary Design Report (30% Design)	October 2011
Final Design (100 % Plans and Specifications)	March 2012

Task c.3: Environmental Documentation
The proposed project was determined to be categorically exempt from CEQA.

Task c.4: Permitting
The Project requires acquisition of a permit from the California Department of Public Health (DPH).

Permitting Documentation Submittals	
DPH permit	March 2011

d) Construction/Implementation

Task d.1: Bid and Award
Pilot equipment design drawings and specifications will be advertised to prospective contractors in an effort to obtain a low bid and construct the project. During this bidding phase, a contractor pre-bid meeting and job walk will be undertaken. Project staff, the consulting engineer, and outside technical experts will answer contractor requests for information, issue and drawing and/or specification addenda. After the given bid period has elapsed, the project team will open bids and award a construction contract to the low bidder.

Task d.2: Mobilization and Site Preparation
Under this task, the contractor awarded the construction work will begin to mobilize on site for the construction of the pilot system. The contractor will also prepare the project site through the construction of yard piping, conduits, and concrete slabs to support the pilot unit, as required.

Task d.3: Project Construction
Project construction will include the assembly of the pilot system on the prepared site and the tie-in of pilot equipment to an electrical power source at the main plant, a raw water feed, and a treated water disposal point. During construction, the project engineer (responsible for plan and specification development) will have an onsite engineer to oversee project construction, answer any contractor questions, and review any applicable contractor submittals. This engineer will be present for the duration of construction and will work with the project manager.

Task d.4: Performance Testing and Demobilization
After the completion of pilot plant construction, the project engineer and project manager will work with the contractor to start up the pilot plant and commence performance testing. Performance testing will include the optimization of power settings to the electrolytic reactor, hydraulic optimization via water flow balancing through reactor cells and tracer tests, and commissioning of the off-gas treatment system.

Once the pilot system is found to be operating as designed and consistently producing treated water, the contractors work will be complete and they will be allowed to remove all construction equipment and personnel from the project site. After demobilization, the pilot unit will be operated and tested for approximately one year.

Construction Submittals	
Notice to Proceed	April 2012
Notice of Completion	June 2012
Final Construction Summary Report	June 2012

e) Environmental Compliance/Mitigation/Enhancement

The project was determined to be exempt from CEQA. No mitigation or environmental compliance is required.

f) Construction Administration

During construction, Agency staff and/or qualified engineering consultants will provide construction management and administration, including daily on-site observation; inspection of material and fabrication processes at the factory; testing of materials used for construction, including soils and concrete; and documentation of these activities.

Construction administration was estimated at approximately 2 percent of the total construction costs for the project.

Construction Administration Submittals	
Quarterly Construction Reports (includes contractors monthly progress reports and invoices)	Ongoing by quarter
Final Construction Summary Report	June 2012

g) Other Costs

Task g.1: PAEP, MP, and QAPP

Also included in this task is the preparation of a Project Assessment and Evaluation Plan (PAEP) to provide the framework for the assessment and evaluation of project performance and to identify measures that can be used to monitor progress towards achieving project goals per the State Water Resources Control Board (SWRCB) PAEP guidance document. A Monitoring Plan (MP) to develop monitoring procedures and a Quality Assurance Project Plan (QAPP) to identify the requirements and criteria for field laboratory procedures are required for this project, as the project will require monitoring of groundwater and possibly surface water. Data collected will be in accordance with Surface Water Ambient Monitoring Program (SWAMP) QAPP and data reporting requirements as well as Groundwater Ambient Monitoring and Assessment (GAMA) Program protocols.

Other Submittals	
PAEP	April 2012
MP & QAPP	April 2012

h) Construction/Implementation Contingency

Costs for contingency for construction/implementation have not been assumed as a separate budget item and are assumed within the construction costs Task d.

Procedures

No other procedural agreements are required.

Standards

The project will designed and constructed in accordance with the appropriate standards, including those from ASTM, American Waterworks Association (AWWA), and other construction industry entities, and appropriate sections of the Health and Safety Code. All DPH requirements will be strictly enforced.

Acquisition of Land or ROWs

The project does not require a land purchase or easement. The proposed pilot project will be located on CLWA property.

Building Materials, Project Design Status, and Bid Solicitation Efforts

Building materials to be used will be in accordance with ASTM, AWWA, and construction industry standards, and consistent with the materials used on other Agency construction projects. The Project has not completed preliminary design, is currently at 10% (conceptual) design. Preliminary plans and specifications have not yet been drafted. Bids for construction will be solicited once final design is complete in accordance with contracting law.

Permits

Required permits are described above in Task c.4. Permits will be obtained prior to construction.

Status of Preparation and Completion of Environmental Compliance Requirements

Project was determined to be exempt from CEQA.

The tribal notification requirement (PRC §75102) is not applicable to this project, as there are no California Native American tribes which are on the contact list maintained by the Native American Heritage Commission that have tribes that have traditional lands located within the area of the proposed project.

Data Management and Monitoring Deliverables

As described in Task g, data for the Project will be collected in accordance with the SWAMP QAPP data reporting requirements as well as GAMA Program protocols.

Other Work Items

No other work items are anticipated to complete this project. CLWA-2 is not a recharge or groundwater management project. It is possible that CLWA-2 could have an indirect positive

impact to the underlying groundwater basin by improving the water quality of potable water and ultimately wastewater effluent applied to groundwater.

CLWA prepared a groundwater management plan in accordance with the provisions of Water Code Section 10753.7, which was originally enacted by AB 3030, for its wholesale service area. The general contents of CLWA's groundwater management plan (GWMP) were outlined in 2002, and a detailed plan was drafted and adopted in 2003. A copy of the GWMP is provided as (Att1_IG1_Eligible_3of5) to this application.

Santa Clara River, San Francisquito Creek Arundo and Tamarisk Removal Project (SC – 1/USFS – 1)

Project Purpose and Need

The City of Santa Clarita is one of the partners working with Santa Clara River Invasive Weeds Task Force to undertake a regional arundo/giant reed (Arundo donax) and tamarisk/salt cedar (Tamarix spp.) eradication program in the throughout the Santa Clara River watershed. The restoration of riparian habitat through the removal of these invasive plant species, some of which have colonized in large extents of the Upper Santa Clara River watershed, improves water quality and increases water supply by increasing the available surface and subsurface water that can be utilized for beneficial purposes, also reduces the risk of flooding and fire hazard. The Project will meet the following IRWMP objectives: Improve Water Quality, Enhance Water Supply and Promote Resource Stewardship.

Project Background

In 2006, the Ventura County Resource Conservation District (District), as the lead agency for the then Ventura County Arundo Task Force, received a $1.5 million grant from the Proposition 13 State Water Resources Control Board (SWRCB) Nonpoint Source Pollution Control Program to facilitate the Task Force's regional eradication program of non-native, invasive species such as arundo/giant reed and tamarisk/salt cedar within the Santa Clara River watershed. That effort resulted in the development of the Upper Santa Clara Arundo River Watershed Removal Plan (SCARP).

SCARP is a long-term eradication, monitoring, and maintenance plan to guide and facilitate the implementation of arundo and/or tamarisk removal projects within the upper Santa Clara River watershed. The plan includes a programmatic California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) document and related documentation for the implementation, maintenance, and monitoring of arundo and tamarisk removal projects within the riparian corridors (500-year floodplain) of the upper Santa Clara River watershed which allows any agency or organization to perform arundo/tamarisk removal projects of any size within upper Santa Clara Watershed. The SCARP is a living document and will be updated periodically as new technologies become available, regulations change, or new resources/issues are identified.

The SCARP also included an implementation aspect which included development of a phased plan to remove arundo/tamarisk on 297 acres of land owned by the City of Santa Clarita. The site specific implementation project covered approximately 75 acres of the 297-acre site and removed 20 acres of arundo and tamarisk. Due to the timeframe of the grant and the presence of endangered species, the Task Force was only able to initiate the first year of the site specific removal project. Since that time returning to the site specific project site to complete the eradication activities has been a priority of the Task Force. As a result of the SCARP effort, several stakeholders have begun to work together to form the Santa Clara River Invasive Weeds Task Force to better coordinate and communicate about invasive species throughout the watershed.

Project Description

The Proposed project is the implementation of the site specific arundo and tamarisk removal project within the City of Santa Clarita in a highly visible area bordered by recreational trails to demonstrate a natural resource management project to the public, improve habitat, and increase surface water.

The project will be conducted in two phases.

SC-1/USFS-1 Phase 1

The first phase will be to complete the removal of arundo and tamarisk in the site specific implementation area (Project Area 1), approximately 150 acres, (areas D, E, F and G on Figure 1).

Within Project Area 1 two types of restoration efforts will be employed to ensure the effective eradication of the invasive species. The first effort will include the initial treatment of the arundo, which includes non-native biomass removal and herbicide application. Arundo may be ground in place with mechanical equipment such as a brush grinder (where appropriate), or removed by manual means employing tools such as chainsaws and brush cutters. After removal of the targeted vegetation, an appropriate aquatically approved herbicide will be applied. In areas where mechanical vegetation grinding is to occur, arundo will be allowed to resprout to a height of 2 to 3 feet, and herbicide will be applied via foliar spray. In areas where manual removal is to occur, herbicide will be applied immediately to the cut stumps via daubing or painting. Foliar application of herbicide may also occur on non-native stands of vegetation where appropriate. In addition to arundo, other invasive plants may be removed, if applicable. As the area is home to several endangered species, the manual means will likely be the prevailing method.

As arundo contains significant energy resources in its root structure, it is difficult to eradicate it in a single treatment phase. Therefore, after the initial treatment, a diligent monitoring and maintenance program will be implemented to facilitate re-treatments and avoid re-infestation of the site. During this time, retreatments of herbicide will be applied regularly to exhaust the belowground resources of the plant and lead to its elimination from the treatment area. Project reconnaissance visits to areas upstream of the treatment area indicate that significant arundo populations do not exist above the site. As potential for re-infestation from upstream sources is thus low, it is expected that in five years, arundo will be eradicated from the project site, and significant growth of native riparian vegetation will be achieved as a result of the elimination of invasive species. Frequent monitoring of the site will ensure that any changes in the site, such as additional arundo resprouts, will be treated in a timely manner.

In addition to removal of noxious weeds, this project contains a potential restoration component. Monitoring of the site will indicate if revegetation is necessary. Native species common to the site such as willows (Salix sp.) and mule fat (Baccharis salicifolia) reestablish readily through natural recruitment once competition from non-native species is removed. However, it may be determined that certain areas within the site require more rapid enhancement than natural recruitment can provide. This would be accomplished through the installation of cuttings of these species, as appropriate.

Previous restoration efforts have shown that this after treatment monitoring and maintenance program is essential to the success of the restoration effort. The monitoring and maintenance program is backed by the Santa Clara River Invasive Weeds Task Force and funded through an endowment that the US Fish and Wildlife Service developed specifically to fund long term management of previously cut arundo infestation areas. The City has been in discussions with US Fish and Wildlife Service to continue the life of this program.

SC-1/USFS-1 Phase 2

The second phase of the project would continue the removal of arundo and tamarisk out of Project Area 1, up into City owned reaches along both San Francisquito and Bouquet Canyon Creeks, and into the Angeles National Forest (see Figure 2). The U.S Forest Service is preparing a NEPA document to resume invasive plant removal in those tributaries. Completion of Phase 2 would complete the original task envisioned in the SCARP and abate the most concentrated arundo infestation in the Upper Santa Clara River watershed.

Project References (provided on CD)

The following references support SC-1's feasibility and technical methods. The Santa Clara River Arundo and Tamarisk Removal Plan (SCARP) included three distinct but interdependent efforts. These efforts included the following documents and permits:

- SC-1/USFS-1.1 Upper Santa Clara River Arundo/Tamarisk Removal Program – Santa Clarita Site Specific Plan (Ventura County Resource Conservation District/AMEC, July 2005).

- SC-1/USFS-1.2 Upper Santa Clara River Watershed Arundo and Tamarisk Removal Program – Long Term Implementation Plan (Ventura County Resource Conservation District, June 2006).

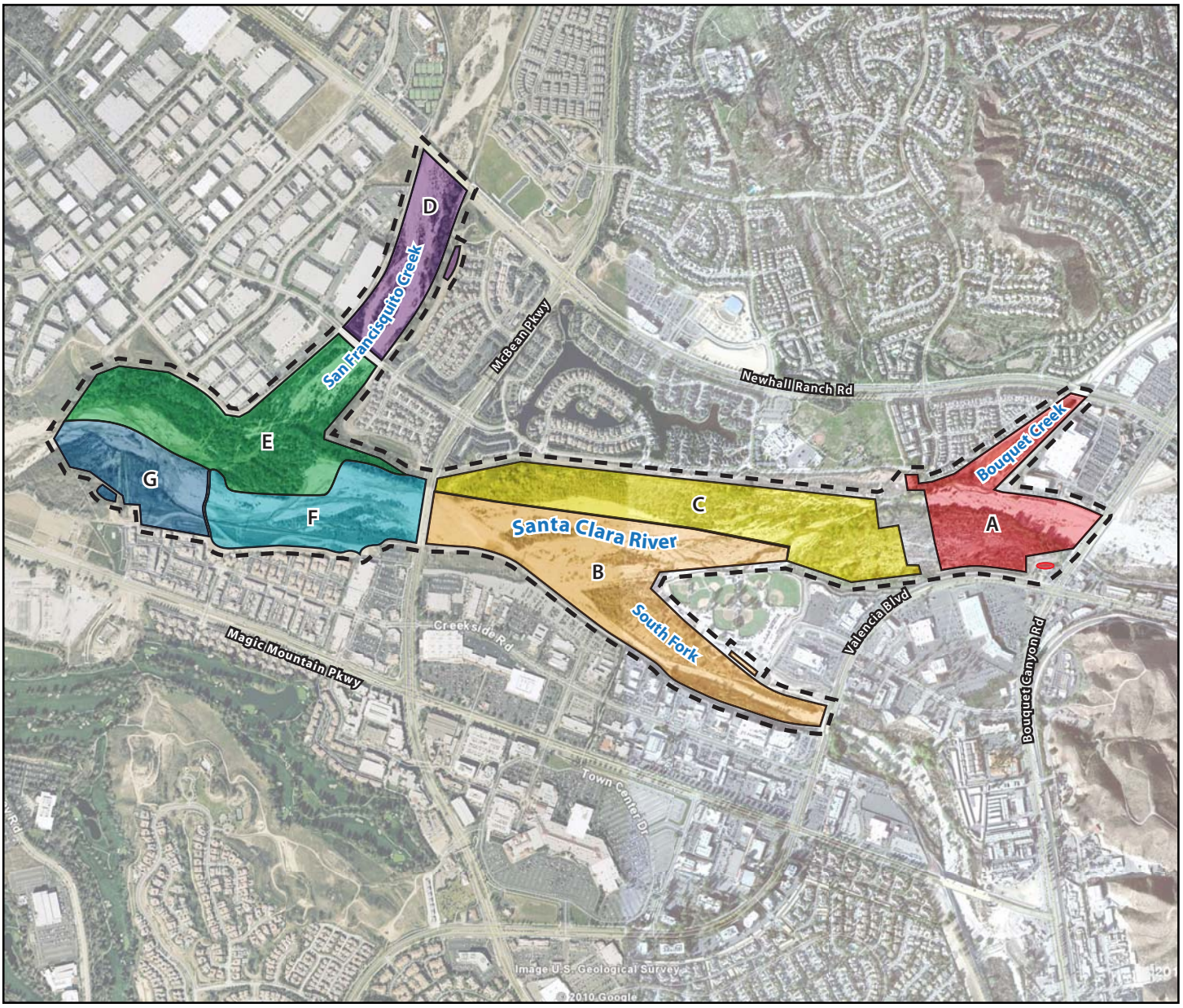
- SC-1/USFS-1.3 Upper Santa Clara River Watershed Arundo/Tamarisk Removal Plan Programmatic Environmental Impact Report (EIR) Final (Ventura County Resource Conservation District) February 2006.

- SC-1/USFS-1.4 Permits from the US Fish and Wildlife Service, California Department of Fish and Game SAA, and Army Corps of Engineers – 2004 – present.

- SC-1/USFS-1.5 Upper Santa Clara River Watershed Arundo/Tamarisk Removal Plan Programmatic Environmental Impact Report (EIR) Statement of Findings and Statement of Overriding Considerations, VCRCD 2006

Project Map

See Figure 1 SC-1/USFS-1 and Figure 2 SC-1/USFS-1 for project maps of the Arundo and Tamarisk Removal Project.

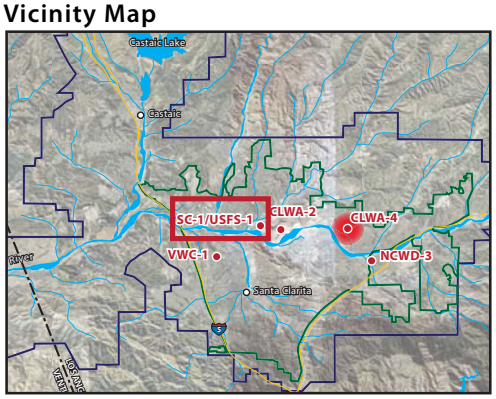


LEGEND:

- Project & Staging Area A
- Project & Staging Area B
- Project & Staging Area C
- Project & Staging Area D
- Project & Staging Area E
- Project & Staging Area F
- Project & Staging Area G
- Project Area of Phase 1

N

Vicinity Map



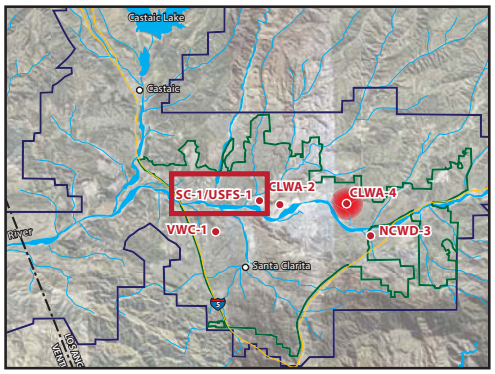
Sources:
1. Upper Santa Clara River Watershed Arundo and Tamarisk Removal Project (SCARP), Site-Specific Implementation Project (SSIP) Area, Wildscape Restoration, November 2008
2. Google Earth - Image U.S. Geological Survey

FIGURE 1 OF SC-1/USFS-1
Santa Clara River, San Francisquito Creek Arundo & Tamarisk Removal Project, Phase 1

LEGEND:

- SC-1/USFS-1 Phase 1
- SC-1/USFS-1 Phase 2
- National Forest
- Interstate Line

N



Sources:
1. Upper Santa Clara River Watershed Arundo and Tamarisk Removal Project (SCARP), Site-Specific Implementation Project (SSIP) Area, Wildscape Restoration, November 2008
2. Google Earth - Image U.S. Geological Survey

FIGURE 2 OF SC-1/USFS-1
Santa Clara River, San Francisquito Creek Arundo & Tamarisk Removal Project, Phase 2

Project Timing and Phasing

The SCARP and efforts by the Angeles National Forest are all part of the larger effort to reduce invasive plants, and specifically arundo and tamarisk, to 2% of the canopy within the riparian areas of the Santa Clara River and its tributaries. Phase 1 would correspond to the current readiness of the project on City owned property in Project Area 1. This area has been in active restoration since 2005. However, funding sources have increasingly become scarce. Proposition 84 Integrated Regional Water Management funding would allow the City to complete the initial removal work in these areas, allowing for less expensive follow-up work to be completed. The second phase of the restoration would move effort into the San Francisquito Creek and Bouquet Canyon Creek tributaries (Phase 2), would allow two high value riparian areas to meet the 2% standard and prevent re-infestation at the confluences of the creeks and the main stem of the Santa Clara River.

Work to be Performed

The tasks necessary to complete the Project are summarized in Table SC-1/USFS-1, and discussed in greater detail below.

TABLE SC-1/USFS-1

Task Number	Work Task Title	Budget	Schedule	
			Start Date	End Date
a)	**Direct Project Administration Costs**	**$25,638**	**Jun 2011**	**Feb 2013**
a.1	Administration	$18,458	Jun 2011	Feb 2013
a.2	Reporting	See Note 1	July 2011	Feb 2013
a.3	Labor Compliance Program	$7,180	Jun 2011	Feb 2013
b)	**Land Purchase/Easement**	**NA**	**NA**	**NA**
c)	**Planning/Design/Engineering/ Environmental Documentation**	**$70,000**	In progress	Sept 2011
c.1	Assessment and Evaluation	NA	NA	NA
1.1	*Geotechnical Investigations, Data Collection and Surveying*	NA	NA	NA
1.2	*Preparation of Technical Memoranda*	NA	NA	NA
1.3	*Preliminary Design Report*	NA	NA	NA
c.2	Final Design	NA	NA	NA
c.3	Environmental Documentation	$60,000	In progress	Sept 2011
c.4	Permitting	$10,000	Mar 2011	Sept 2011
d)	**Construction/Implementation**	**$ 455,575**	**Sept 2011**	**Jan 2013**
d.1	Bid and Award	NA	See Note 3	See Note 3
d.2	Mobilization and Site Preparation	NA	See Note 3	See Note 3
d.3	Project Construction	$455,575	Sept 2011	Jan 2013
d.4	Performance testing and demobilization	NA	See Note 3	See Note 3
e)	**Environmental Compliance/Mitigation/Enhancement**	**NA**	**NA**	**NA**
f)	**Construction Administration**	**$78,650**	**Jun 2011**	**Jan 2013**
g)	**Other Costs**	**$28,250**	**Mar 2011**	**Sept 2011**
g.1	PAEP	See Note 2	Mar 2011	Sept 2011
g.2	Equipment	$28,250	NA	NA
h)	**Construction/Implementation Contingency**	**$58,181**	**NA**	**NA**
	GRAND TOTAL	**$726,449**		

Notes: 1) Costs for Task a.2 have been included in Task a.1
2) Costs for Task g.1 have been included in Task a.1
3) Budget and Schedule for Tasks d.1, d.2 and d.4 are assumed in Task d.3

a) Direct Project Administration Cost

Task a.1, a.2: Administration & Reporting
Project administration includes administration of grant and construction contracts, preparation of reports and plans, coordination of design contracts, and other activities as required to complete design and construction that may not be directly related to those tasks.

The Sustainability Planner for the City of Santa Clarita will complete required tracking and quarterly reports as required by this grant and submit them to CLWA, the granting agency. This person will also coordinate with contractors and develop the necessary administrative record (contracts, RFPs, City Council items, etc.) necessary to complete the requirements of the grant. A final summary report will be prepared and submitted once the project is completed.

The budget for this project assumes the project manager will spend an average of 26 hours per month on this project over the entire 2 year duration.

Task a.3: Labor Compliance Program
The City has a Labor Compliance Program in accordance with the Labor Code 1771.5; ID: 2003.00362. The City's Labor Compliance Specialist will be on staff and will be available to perform preconstruction meetings, to provide reporting forms, perform inspections, and written reports as required in state law for this project.

Direct Project Administration Submittals	
Quarterly Reports	Ongoing by quarter
Final Summary Report at Project Completion	February 2013

b) Land Purchase/Easement

Not applicable. No land purchase or easements are required for Phase 1.

c) Planning/Design/Engineering/Environmental Documentation

Task c.1: Assessment and Evaluation
All planning and preliminary design efforts have been successfully completed.

Task c.2: Final Design
Planning and design of Phase 1 is complete and documented in the Santa Clarita Site Specific Plan, Santa Clara River Long Term Implementation Plan, and a programmatic Environmental Impact Report (EIR) with regional agency permitting. Phase 2 may require further design pending completion of the NEPA process.

Planning/Design/Engineering Submittals	
Santa Clarita Site Specific Plan	Completed
Santa Clara River Long Term Implementation Plan	Completed

Task c.3: Environmental Documentation

The Ventura County RCD certified the EIR prepared for the programmatic program, which covers the actions provided for in Phase 1 of this Project. The Angeles National Forest is complying with NEPA and is completing the environmental document required for Phase 2 of the project. Phase 1 is not dependent on the NEPA compliance and can proceed using the approved CEQA document.

CEQA/NEPA Documentation Submittals	
Programmatic EIR	Completed
NEPA EA/Environmental Impact Statement	September 2011

Task c.4: Permitting

This project plans to utilize the Upper Santa Clara River Arundo/Tamarisk Removal Program (SCARP) programmatic permits held by the VCRCD. A California Department of Fish and Game (CDFG) Section 1602 Streambed Alteration Agreement, Army Corps 404/401 certifications had previously been acquired, but will now need annual renewal to ensure compliance.

Permitting Documentation Submittals	
ACOE 404/RWQCB 401	September 2011
CDFG Section 1602	September 2011

d) Construction/Implementation

Task d.1: Bid and Award

Removal of aurundo and tamarisk is currently done at the current 150-acre site using the subcontractor Wildscape Restoration. The contractor was chosen during the project bid and award process in 2008. The proposed project will utilize this contract which can be amended for current and future work of a similar type and scale.

Task d.2: Mobilization and Site Preparation

- Pre-construction surveys
- Pre-construction meeting
- Delivering equipment to site and predetermined staging area

Task d.3: Project Construction

- Biological monitor on site at all times
- Project management consultant surveying initial work
- Deploying tractors and chippers
- Vegetation removal hand crews
- Certified applicators daubing Aquamaster with Blazon dye over cut arundo stalks
- Removing biomass to chipper and placing chipped material into dump truck for appropriate disposal Dump truck hauls material away

Task d.4: Performance Testing and Demobilization

- Project management consultant monitors for resprouts
- Hand crews and biologists deployed to spray resprouts with Aquamaster with Blazon dye

Construction Submittals	
Notice to Proceed	September 2011
Notice of Completion	February 2013

e) Environmental Compliance/Mitigation/Enhancement

CEQA compliance for the project is discussed in Task c.4. The VCRCD adopted a Mitigation Monitoring Plan as part of the Final PEIR which contains feasible mitigation measures to reduce impacts to the environment from implementation of the SCARP (see Reference SC-1/USFS-1.5 included on CD). The programmatic EIR describes the range of techniques typically employed for removal of arundo and tamarisk infestations, analyzes the impacts resulting from the range of techniques, and identifies appropriate mitigation measures. This allows for the selection from a wide variety of techniques by future project proponents. Project proponents wishing to use techniques not covered by these programmatic permits would need to apply for individual permits for future removal projects. The EIR determined potential short-term significant impacts: Noise, Water Quality, and Biological Resources. However, due to the long term environmental benefits, a Statement of Overriding Considerations of was adopted by the VCRCD.

These efforts have not been budgeted separately and their costs are included in the Planning/Design/Engineering/Environmental Documentation Task.

f) Construction Administration

During construction, City staff and project management consultants will provide construction management and administration. This includes including daily on-site observation before the start of work; inspection of equipment to ensure good working order; checking progress and issues from previous day, developing action plan for working in consultation with on site biologist.

Construction Administration Submittals	
Quarterly Construction Reports	Ongoing by quarter
Final Construction Summary Report	February 2013

g) Other Costs

Task g.1: PAEP

Also included in this task is the preparation of a Project Assessment and Evaluation Plan (PAEP) to provide the framework for the assessment and evaluation of project performance and to identify measures that can be used to monitor progress towards achieving project goals per the State Water Resources Control Board (SWRCB) PAEP guidance document. A Quality Assurance Project Plan (QAPP), which outlines a plan for collecting pre- and post project water quality data has been prepared for the project, and has been reviewed and certified by the Los Angeles Regional Water Quality Control Board (RWQCB). Data collected will be in accordance with Surface Water Ambient Monitoring Program (SWAMP) QAPP and data reporting requirements as well as Groundwater Ambient Monitoring and Assessment (GAMA) Program protocols.

Task g.2: Equipment

Additional equipment that will be purchased:

- Aquamaster
- Dump truck
- Dump charge
- Blazon dye indicator

Other Submittals	
PAEP	September 2011
QAPP	Completed

h) Construction/Implementation Contingency

Costs for contingency for construction/implementation have not been assumed as a separate budget item; all costs are assumed in Task d) Construction.

Procedures

The City and stakeholders through the Task Force will be working with the US Fish and Wildlife Service to fund long term management of previously cut arundo infestations. The City also plans to coordinate restoration efforts with the Angeles National Forest when their NEPA compliance process is complete and Phase 2 of the project can begin.

CLWA is also the contracting entity that will be the recipient of the grant and act as the grant administrator. CLWA will execute an agreement with the City in order to implement the activities outlined in this proposal.

Standards

The project will be designed and constructed in accordance with the appropriate standards, including those from the Association of Testing and Materials (ASTM), American Water Works Association (AWWA), and other construction industry entities, as applicable. All California Department of Public Health requirements will be strictly enforced.

Acquisition of Land or ROWs

No land purchase or easements are required for Phase 1. However, if needed, the City has requested and been granted access to Los Angeles County property for staging or accessing land on flood control right-of-way or easements.

Building Materials, Project Design Status, and Bid Solicitation Efforts

Building materials to be used will be in accordance with ASTM, AWWA, and construction industry standards, and consistent with the materials used on other regional restoration projects. The Phase 1 project is 100% designed and ready for implementation. A contract is currently in place for wildlife restoration which can be amended for the current project.

Permits

Required permits are described above in Task c.4. Permits had previously been acquired, but will now need annual renewal to ensure compliance.

Status of Preparation and Completion of Environmental Compliance Requirements

A NEPA document is currently being developed by the US Forest Service for the Phase 2 work. CEQA has been previously complied with for the SCARP project, which provides coverage for the Phase 1 work.

The tribal notification requirement (PRC §75102) is not applicable to this project, as there are no California Native American tribes which are on the contact list maintained by the Native American Heritage Commission that have tribes that have traditional lands located within the area of the proposed project.

Data Management and Monitoring Deliverables

As described in Task g, data for the Project will be collected in accordance with the SWAMP QAPP data reporting requirements as well as GAMA Program protocols.

Other Work Items

No other work items are anticipated to complete this project. It is possible that SC-1/USFS-1 will have a positive impact to the underlying groundwater basin by protecting the recharge area, replacing high water use non-native plants with natives, and improving the water quality by increasing the available surface and subsurface water; reducing erosion and sedimentation after native vegetation becomes established; reducing salinity in the water and soil produced by tamarisk trees; and improving hydrogeomorphological characteristics of the watershed. As SC-1/USFS-1 is not a recharge or groundwater management project; a GWMP need not be prepared.